WORLD OIL

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for the drilling-producing-pipe line industry

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for the refining-natural gasoline industry

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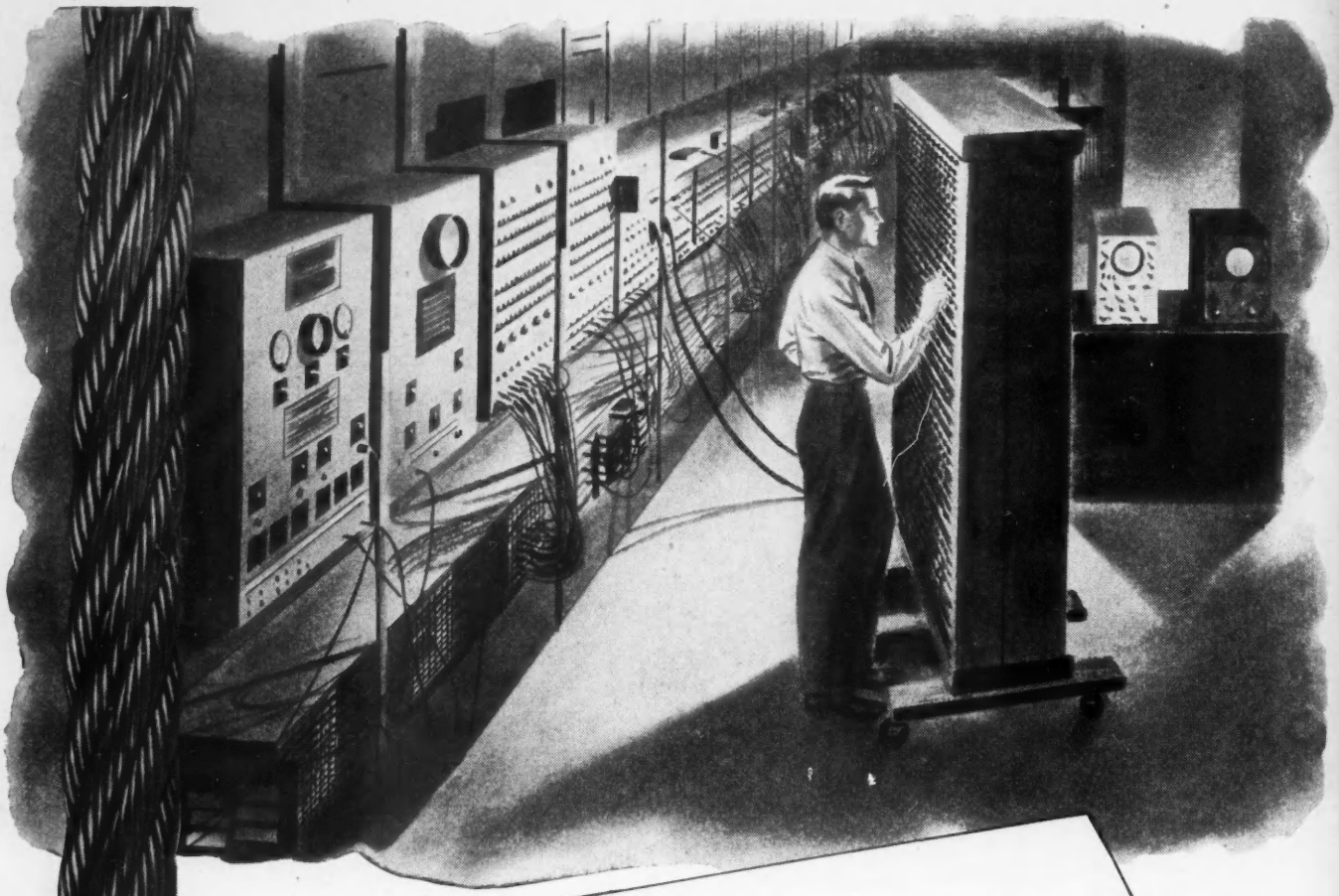

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THE OUTLOOK

THE TREASURY DEPARTMENT will add materially to its staff of consultants who will aid in drafting tax recommendations to be submitted to Congress when it reconvenes in January. Most of the tax changes urged by the department will give materially less relief than the House Ways and Means Committee has indicated it will seek.

VENEZUELA plans to take full advantage of the world dollar shortage to increase her oil exports to countries which are reluctant to buy in the U. S. and is encouraging her concession companies to expand their facilities. Production during the first quarter of the year is officially reported as 104,422,190 barrels, compared with a total 1946 output of approximately 388,500,000 barrels.

AREAS WHERE concessions possibly may be obtained by American-Independent Oil Company, the newly organized foreign-operating concern of 11 U. S. independents, include especially the Neutral Zone, between and jointly owned by Kuwait and Saudi Arabia, and the country of Yemen at the southwest corner of the Arabian peninsula.

CONSTRUCTION of the proposed national superhighway system will be retarded by high costs, the steel shortage, and the housing shortage, the latter interfering with house moving or house demolition for city expressways.

TEMPLATE PROJECTION, in three-dimensional form, is effecting considerable savings in time and material. On such fabricating as repairing of burned out or eroded equipment, or locating parts to be welded, adaptation of this method is expected to speed up and simplify much oil field maintenance.

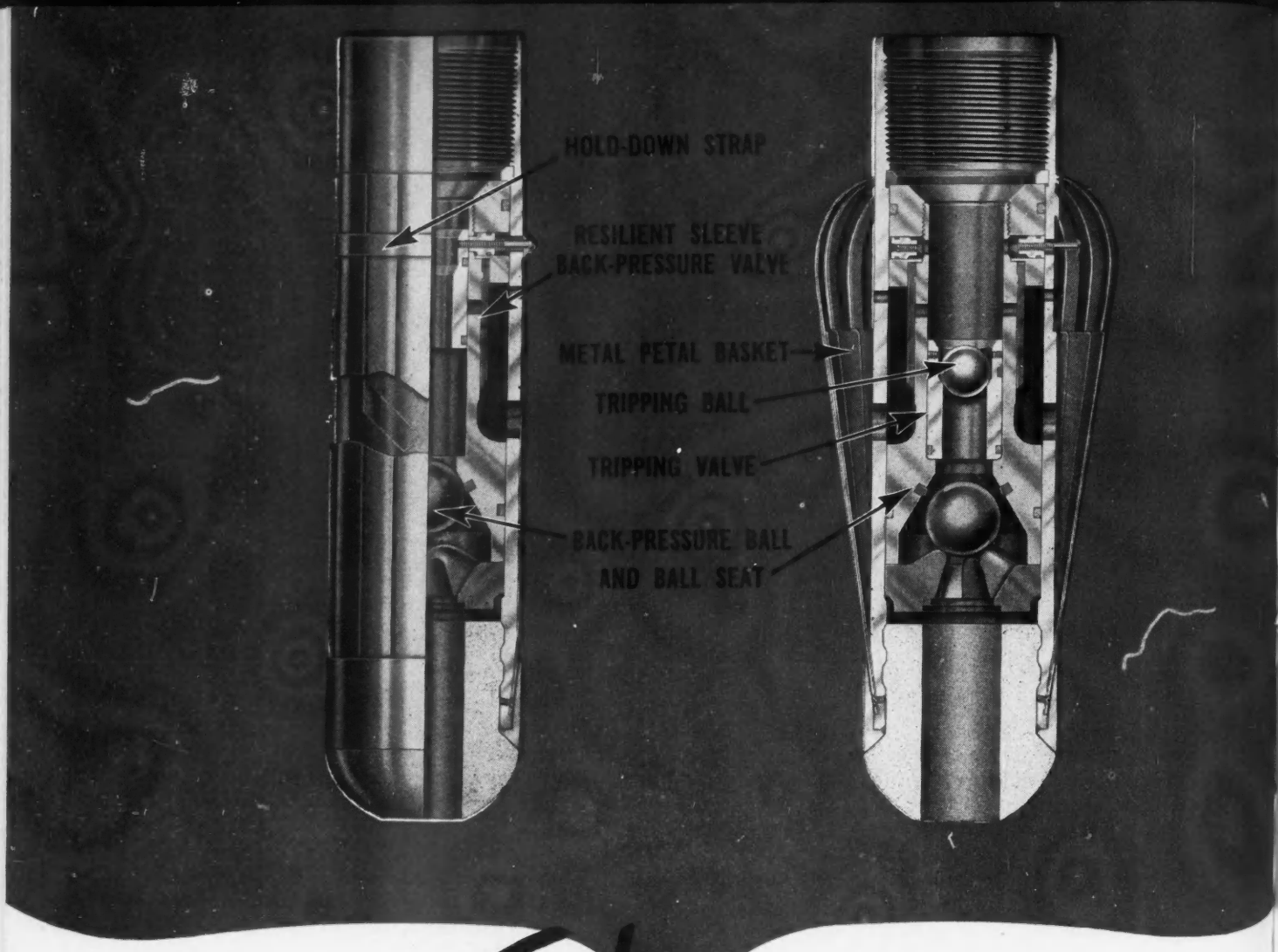
MAXIMUM OPERATION of U. S. shipbuilding and ship operation will be favored by the State Department when new shipping legislation comes up in Congress next year. The department will urge a ship construction program running for many years, to keep yards in operation, and the channeling of as much foreign trade as possible to American-flag vessels.

SOVIET RUSSIA continues to press energetically for increased oil production and in the second quarter of this year ran output to 18 percent above the same period in 1946. There are indications, however, that this expansion is being secured only with difficulty, since many other industries upped their output by considerably greater percentages and only 15, mostly involving heavy construction, made poorer showings out of 48 industries reported.

TEXAS' GOVERNOR Beauford Jester likely will be elected chairman of the Interstate Oil Compact Commission at the Oklahoma City meeting December 4-6.

ECONOMISTS look for a continued decline in U. S. exports, including oil and oil-industry steel, as the government cuts back on credits, loans and gifts, but so far see no way in which our imports, foreign travel expenditures and other "invisible" items of trade can be built up to a point where they will support the present export level.

APPROXIMATELY THREE YEARS will be required to fill backlogs of orders for large diameter pipe, and projected lines for which materials have not yet been ordered will keep the pipe manufacturing industry going at top speed until 1952.



THE BAKER *Triplex* CEMENTING SHOE does an important job...and does it well!

The "Triple" purpose of the Baker TRIPLEX Cementing Shoe is to pack-off in large-diameter, or irregularly-shaped holes, retain all cement slurry above the shoe, and protect permeable, low-pressure formations below from cement contamination.

All cement slurry is directed upward through side whirler ports. A sleeve-type, resilient rubber back-pressure valve opens readily to permit passage of the slurry into the annulus around the shoe, but closes instantly to prevent any return flow of slurry. The Baker Metal Petal Basket is intended to form a bridge, thus preventing cement slurry from settling into permeable, low-pressure zones below. The Basket is indispensable in large-diameter, or irregular-shaped holes.

The Baker TRIPLEX Cementing Shoe (Product No. 136) operates as a conventional float shoe while running-in the casing. Then, after reaching the desired point in the hole, circulation is established through the ample interior passageway of the shoe, and the hole is conditioned preparatory to cementing. The Tripping Ball now is pumped (or allowed to gravitate) down the hole to seat upon the Tripping Valve. A pressure of 400 to 500 psi is applied to the casing which shears the screws in the Tripping Valve, permitting it to move downward and expose the cementing ports. Shearing these screws also releases the hold-down strap around the basket, allowing the basket to expand outwardly against the wall of the hole. The cementing operation is then carried out in the conventional manner with all cement slurry directed upward and held above the shoe by the expanded Baker Metal Petal Basket.

The Baker TRIPLEX Cementing Shoe consists of a whirler float shoe with a Baker Metal Petal Basket fastened on the shoe below the cementing ports. All internal parts are made of readily drillable materials. Two one-half inch set screws hold the inner assembly stationary to facilitate drilling out the shoe.

Contact your nearest Baker office or representative for details and recommendations.

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We Say It Again: Tax The Co-ops

ELSEWHERE in this issue of WORLD OIL is a story which gives details about how some co-ops ride the national taxpayers, which is, of course, the principal objection to co-ops and in most instances, we suspect, the main reason for their successful operation.

No one can object to a group of persons getting together and bulking their purchases and distribution expense. Of course such "bulking" calls for management, and the cry that the "middle man" is cut out of the picture is a false one because the "management" of the co-op often substitutes for at least a substantial part of the "middle man" expense.

But what we object to is the idea that a co-op business enterprise can evade taxes which private enterprises must pay. And obviously if ALL enterprises were of a co-op nature, the country would go bankrupt or the co-ops would have to be taxed. It certainly is an unfair practice when some of our citizens can do business and make their purchases from a tax-free enterprise, while others have to suffer the added tax burden involved in such a procedure.

Tax the co-ops like any other enterprise. Those which would die deserve to die and those which can continue to operate would at least have the satisfaction on the part of their members that they were not tax evaders.

More Taxes Ahead For U. S. Motorists

U. S. MOTORISTS are carrying a heavier tax burden than ever before and it is likely to grow heavier.

State gasoline tax collections in 1947 are expected to reach an all-time high of about $1,170,000,000, according to the American Petroleum Industries Committee of the API. This figure will surpass by more than $100 million the peak reached last year when states collected $1,065,000,000 from this source.

In addition to the above amount, the committee forecasts additional collections by the states of nearly $585 million from motor vehicle registration fees and motor carrier taxes. These estimates do not include municipal, county or federal taxes of any kind that are levied against automobile and truck owners.

The committee based its prediction of unprecedented gasoline and automobile revenues for states on the increasing number of private and commercial vehicles registered, higher gasoline consumption rates, and enactment of higher gasoline tax rates this year in California, Colorado, Connecticut, Maine and Maryland, Nevada, Rhode Island, Vermont, and the District of Columbia.

The trend toward higher automotive taxes has not spent its force as evidenced by the introduction of more than 70 gasoline tax increase bills in the legislature of 30 states, nine of which were enacted. It is almost certain that higher gasoline taxes will be proposed again in many states.

☆

Our economy has the tremendous advantage of possessing 3½ million business enterprises outside of agriculture and about 6 million business enterprises in agriculture. This means that the American economy has nearly 10 million places where innovations may be authorized. Have you ever thought of that? Ten million places where experiments may be tried, where no further authority is needed to authorize an experiment. Our economy operates under about 10 million separate private business budgets. No regimented economy can hope to compete in dynamic drive with an economy which possesses nearly 10 million independent centers of initiative. I don't see that the British or the Russians have a chance. They will fall farther and farther behind unless in some way or other, they can multiply the centers of initiative, increase the numbers of the authorities who can authorize innovations.

One may expect the American economy to solve the problem of production far more effectively than any other economy. By Sumner H. Slichter, Harvard University, in the *United States Investor.*

How About a UN Without Russia?

EVERY person with whom we are acquainted genuinely wanted the United Nations idea and organization to succeed in its expressed aims at world peace. Many of our friends (and we must confess, we ourselves) had grave doubts of its success.

We were afraid that the veto power would be the stumbling block. The veto power would actually nullify concerted effort to curb a trouble-maker, we felt.

How well-founded these fears were has been thoroughly demonstrated.

Russia has shown, in our opinion, that the principal use to which the United Nations can be put, is to obstruct and cause delays until—

Until what?

Few people other than those of the communistic persuasion doubt that Russia, as imperialistic in her actions as ancient Rome, has been using the veto power to gain time . . . time to recover and build until she will have something beside proximity to back up her wishes.

What is the answer, from the American viewpoint?

Certainly we do not want to go to war—but we are drifting that way rapidly.

The answer, we think, and we think it with the deepest regret, is that the rest of the nations of the world other than Russia and her satellites, should form a United Nations which would proceed to do everything possible to cure the ills of the world in a practical manner—with an alliance which would have teeth in it. We think we should strengthen our armed forces, resume military training of our youth, and be thoroughly prepared for the clash. Such procedure might avoid the clash.

We greatly fear that unless something along this line is done (the conference in Brazil indicates that others are thinking along similar lines) we may not be as well prepared for the clash as common sense tells us we should be.

THE WEEK'S NEWS

Tax-Troubled Private Enterprise Gets A Look at Co-ops' Juicy Exemptions

First disclosure of how cooperatives benefit from their tax exemptions was given in a report by the House Small Business Committee on Greenbelt Consumer Services, Inc., which it was found paid in the last seven years less than 30 percent of the federal income and excess profits taxes it would have paid as a private corporation.

While the Greenbelt co-op, a consumer organization in a government-planned community in Maryland, was not engaged in the oil business in a big way as are some other cooperatives, the committee's report was held to be highly significant since, for the first time, it offered a definite comparison of what a cooperative actually pays in taxes and what it would have to pay if organized as a corporation.

The figures, compiled by a certified public accountant retained by the committee and made public by Committee Counsel Willis J. Ballinger, showed that the Greenbelt cooperative paid federal income taxes totaling $25,299 for the seven years, 1940-46. As a privately-owned corporation it would have had to pay $85,447, it was estimated. During the years the excess profits tax was in effect, the organization paid only a fraction of what a corporation would have paid on the same business, but even in 1946, with repeal of the excess profits tax, it paid less than half as much as a similar privately owned corporation, Ballinger stated.

Ballinger pointed out that a Treasury ruling permits exemption of patronage refunds from net taxable income but, he said, "when such patronage refunds are paid in stock or other evidences of equity interest, they can be retained by the consumer cooperative corporation for purposes of expansion. The private corporation is not able to set aside any part of its net income tax-free for purposes of expansion."

Ballinger added that the committee accountant had been unable to determine from the cooperative's reports whether patronage refunds in any tax year had been paid in cash or in stock or other evidences of equity interest.

"Whether justifiable or not," he said, "it (the Treasury ruling) does enable such cooperatives to pay far less taxes than a privately owned corporation would have to pay and to utilize, if it so desires, this tax-free income to expand its operations."

The committee counsel pointed out that the issue is confused "by statements by consumer cooperative interests that nontax-exempt cooperative corporations pay all the taxes paid by private corporations."

"Such statements, however, do not say that a consumer cooperative corporation pays all taxes paid by a private corporation in equal amount on comparative net income, and this is very important," he declared.

The committee this month will hold hearings on cooperatives in Seattle, San Francisco and Los Angeles, none of which will relate to petroleum, but later will go into the Midwest for hearings at Minneapolis, Kansas City, South Bend and Columbus, where the matter of petroleum cooperative activities may be brought up in connection with the questioning of officials of the Consumers Cooperative Association, largest of those engaged in production and refining of oil.

Forum on Material Shortages Planned for IPAA Meeting

The Independent Petroleum Association of America, holding its 18th annual meeting at Oklahoma City, September 29-30, will highlight a forum on material shortages. Tubular goods, such as casing, line pipe and fittings, the scarcity of which has retarded drilling and development, will be explored in the discussion. E. J. Warren, Midland, Texas, chairman of the association's oil field material shortages committee, will preside and act as moderator.

Two nationally known speakers are to appear before this forum: Warren L. Baker, editor of WORLD OIL, will discuss the demand for tubular goods in relation to wells now drilling or expected to be drilled in the months ahead. W. C. McConnor, vice president of National Tube Company, Pittsburgh, will address the oil operator's on "Current and Future Availability of Materials to Meet Demand."

The forum will study the equitable distribution of what steel products are available, means of alleviating current shortages, treatment of special problems, and research toward reducing some of the excessive costs now related to materials use.

Electric Utilities Turn to Oil, Gas

Electric utility plants, largely as a result of the coal-supply problems which have plagued them since the end of the war, are turning increasingly to oil and gas, it is disclosed by data filed with the Federal Power Commission.

Whereas their consumption of coal in July was 16.7 percent greater than in the same month last year, consumption of fuel oil was 47.9 percent greater and of gas 14.2 percent greater.

In volume, fuel oil consumption in July was 3,714,959 barrels, compared with 2,511,780 barrels in July, 1946, and gas consumption was 37,289,414 Mcf against 32,638,696 Mcf, FPC reported.

$2 Billion Research Budget Suggested to President

A national expenditure of $2 billion a year, half of it to be supplied by the government, for research in all fields has been set up by the President's Scientific Research Board as the goal to be achieved by 1957.

This amount, approximately 1 percent of the anticipated national income, would represent practically the doubling of the sum now spent by industry, education and the government in this field, and is the minimum on which the necessary protection and development of the nation can be assured, the President was told in a report from the board.

"The destructiveness of the recent war," that report said, "makes it inevitable that much of Europe, in rebuilding its factories, will soon possess an industrial plant more modern than ours of today.

"What may be the significance of this fact can be illustrated by the unhappy experience of England during our lifetime. Since the turn of the century, the British have been paying, in terms of technological obsolescence, the penalty for their early industrial leadership. Particularly in the basic industries, British facilities and technology were older and less efficient than their German counterparts. The balance of power in Europe was upset primarily as a result of this fact, and the world was plunged into two devastating wars. Today, one of the most serious long-term problems still facing the British government is the modernization of industrial facilities."

The board did not charge that the U. S. would find itself in a similar position in the foreseeable future. In fact, it held we are so far advanced that there is no immediate prospect of falling behind, but the long-range program contemplates safeguards against such a possibility.

The board's recommendation of a minimum of $2 billion a year for research would merely keep the U. S. in step with other countries. Russia this year, it was pointed out, is reported to have budgeted $1,200,000,000 for research as compared with $900 million in 1946, and this is only the first step in a five-year program aimed at producing 140,000 engineers and scientists each year.

Currently, the board found, our research and development program is unbalanced in that we are devoting too small a proportion of our total resources to basic research and too small a proportion of our development resources to non-military ends. By 1957, it was declared, we should be spending at least four times as much as at present on the former and twice as much on the latter.

Texas Well Permits

Permits to drill 145 new wells in Texas were approved by the Texas Railroad Commission last week. There were 30 in North Texas and 38 in Southwest Texas. West Texas reported 23 permits, and there were 8 from East Central Texas, 11 from the Gulf Coast, 26 from West Central Texas and 9 from the Panhandle.

Mines Bureau Hikes Demand Estimate For 1947 to 2,118,000,000 Barrels

The Bureau of Mines has again increased its estimates of oil demand for the current year and now forecasts that total demand in 1947 will amount to 2,118,000,000 barrels, compared with a forecast in June of 2,092,000,000 barrels.

With an actual demand in the first quarter of 532,500,000 barrels and in the second quarter 513,400,000, the Bureau estimates that current quarter demand will be 523,600,000 barrels and that 548,500,000 barrels will be required in the last quarter. But the first quarter of 1948 will exceed anything heretofore experienced, the Bureau indicated, with a demand for 566 million barrels.

With exports expected to decline as a result of lack of dollar credits abroad, domestic demand will increase at a faster rate than overall demand, the Bureau figured. Actual domestic demand was 494,600,000 barrels in the first quarter of this year and 469,600,000 in the second quarter. It is estimated at 482,500,000 for the current quarter and 512,100,000 for the last quarter, making 1,958,800,000 barrels for the year.

Domestic demand in the first quarter of 1948 will run 531,300,000 barrels, it was forecast. To meet demand, the domestic industry produced 463,300,000 barrels of crude and other liquids in the first quarter, imported 45,400,000 barrels and withdrew 25,800,000 barrels from stocks. In the second quarter, production was 489,900,000 barrels and imports 38,900,000, permitting an increase of 15,400,000 barrels in stocks. For this quarter, production is estimated at 507,500,000 barrels and imports at 41 million, which will permit a 24,900,000-barrel increase in stocks; while for the fourth quarter, production is placed at 508,900,000 barrels and imports at 42 million, which will provide an addition of 2,400,000 barrels to inventories. Thus, total domestic production for the year will approximate 1,969,600,000 barrels and imports will be 165,300,000, with a gain in stocks of 16,900,000 barrels.

In the first quarter of 1948, production is forecast at 504,200,000 barrels and imports at 42 million, and it will be necessary to withdraw 19,800,000 barrels from stocks to meet demand.

As a result of the dollar shortage abroad, it is estimated that exports, which totaled 37,900,000 barrels in the first quarter and 43,800,000 in the second, will drop to 41,100,000 this quarter, 36,400,000 in the fourth quarter and 34,700,000 in the first quarter of next year.

"Potential demand for oil products is so great as to indicate the need for maintaining refinery operations at maximum capacity," the Bureau commented. "Even if exports should be reduced by lack of dollar credits abroad, the supply of products is not likely to exceed domestic requirements after allowing for normal seasonal changes in stocks of refined products."

The forecast for 1948, it explained, is based on the assumption that runs to stills cannot be increased more than 4 percent and that no large increase in product imports will take place, although a substantial increase may be expected in liquid products supplied by natural gasoline and cycling plants.

The increase will be met by nine states, with demand on all other states unchanged from previous levels. The greatest increase will be in Texas, from 2,255,000 to 2,290,000 barrels, but demand on California will increase from 920,000 to 930,000 barrels; Louisiana, 437,000 to 445,000; Kansas, 305,000 to 309,000; Wyoming, 122,000 to 124,000; New Mexico, 106,000 to 110,000; Mississippi, 96,000 to 99,000; Arkansas, 81,000 to 82,000, and Colorado, 43,000 to 44,000.

Special Train to Take Oil Men to Chicago API Meeting

A special API train from South Texas to Chicago will carry oil men to the American Petroleum Institute's annual meeting, leaving Houston Saturday, November 8, at 7 p.m. It will be operated as a round trip special train, and will leave Chicago Thursday, November 13, at 7 p.m.

The route to be followed will be Missouri Pacific to St. Louis and Wabash from St. Louis to Chicago and return to St. Louis, with Missouri Pacific from St. Louis to Houston.

The leaving and arrival times were so arranged as to allow South Texas oil men to attend the Rice Institute-Arkansas football game in Houston on Saturday, November 8, and still have time to catch the train. It will arrive in Chicago the next evening, Sunday, at 9:15. The returning special train will arrive in Houston Friday, November 14, at 9:45 p.m., which will permit South Texas oil men to attend the Rice-Texas A. & M. game Saturday, November 15.

The train will be a 20-car train consisting of a lounge car, two diners, room cars and three 10-section cars. The number of cars which can be attached to the special is limited and in view of a heavy prospective attendance the Missouri Pacific Railroad suggests that reservations be made early.

North Texas oil men will go to the API meeting on a special train to be operated over the M.K.&T. Railroad, while a special train will be operated out of Tulsa to Chicago to accommodate Oklahoma oil men.

The Dallas train will leave at 4:15 p.m., November 8, and arrive in Chicago at 2 p.m., November 9. It will be a 15-car train, with more cars to be added if the reservations warrant.

The return trip will start at 11:45 a.m., November 13, with the train arriving in Dallas at 9:50 a.m., November 14. In addition, there will be special cars on a regular train leaving Chicago at 11:45 a.m., November 14, and reaching Dallas at 9:55 a.m., November 15.

Government Makes Survey of Oil Products It Will Receive

OGD Director Max W. Ball last week asked all oil companies to report, either to the armed forces or the Bureau of Federal Supply, the amounts of petroleum products which each company has programmed for delivery to the government during the current fiscal year.

Ball emphasized that it was essential that the government know immediately the quantities of products which will be available to meet its requirements, although officials of the Army-Navy Petroleum Board earlier had disclosed that the situation, for the first half of the fiscal year at least, has eased to the point where they are confident of securing at least 90 percent of their requirements.

Other moves with respect to the supply situation were taken in the War Assets Administration, where final steps were being made toward the disposition of the first high-octane refinery to be sold under the new plan giving preference to buyers guaranteeing that products will be sold to the government, and in the National Petroleum Council, the next meeting of which has been called by Chairman Walter S. Hallanan for October 9, somewhat earlier than it normally would have been held. One reason for advancing the date, it was said, was that the council could meet immediately following the American Gas Association convention at Cleveland, thus saving southwestern gas men the necessity of making two trips East.

Interior Department officials, meanwhile, are studying the advisability of having the government establish a quota of military oil supplies which each company would be expected to deliver.

The idea was worked up in the Oil and Gas Division some time ago and is now before higher officials of the department. The quotas would be offered for voluntary acceptance by the companies, since there is no law under which their adoption could be made compulsory.

WAA also is preparing to put additional 100-octane refineries on the auction block as quickly as they can be cleared for disposal, in an effort to provide additional productive capacity which can be put on stream by the industry. Final steps are being taken toward the sale of two big plants at Texas City. One cost the government $11½ million and was operated during the war by the American Liberty Oil Company. The other cost $11,200,000 and was operated by Republic Oil Refinery Company. Republic is the only bidder for the latter, offering $1,834,255. In the near future, bids will be opened on the $16½ million refinery at Catlettsburg, Ky., operated by the Ashland Oil and Refining Company during the war, and the $8½ million Norwalk, Calif., plant operated by Wilshire Oil Company.

In a letter to Representative Clifford R. Hope of Kansas, who had inquired about the supply outlook, OGD Director Ball said the situation will be "uncomfortably tight" throughout the whole of the coming winter.

Administration and Congress May Wage Tug-O'-War Over Pipe For Arabia

Reported approval by the State Department of Arabian American Oil Company's application to the Office of International Trade for authority to export 40,000 tons of pipe for its projected pipe line in Saudi Arabia may become another point of controversy between the Administration and Congress.

The issue was raised by Russel B. Brown, general counsel of the Independent Petroleum Association of America, in identical letters to Secretary of State George C. Marshall, Commerce Secretary W. Averell Harriman, Interior Secretary J. A. Krug, the Army-Navy Petroleum Board and the chairmen of nine Congressional committees concerned with oil and steel.

In his letter, Brown assailed the reported reasons on which the State Department is said to have based its approval of the company's application, which he declared contravened the policy of Congress in extending the Export Control Act, that no exports which would injure the domestic economy should be permitted. The spot shortages which will occur this winter, he said, are primarily the result of the lack of steel to build new pipe lines and tank cars.

Brown also attacked the reported contention that if the license is refused the pipe could be warehoused until such time as exportation became possible, asserting that such a position is indefensible and the government should not countenance hoarding in a time of need.

Brown declared that the contention that failure to go ahead with the line "might" lead to political consequences "implies that it is more important for one operator in a foreign land to be protected in its activities abroad than it is to maintain an adequate domestic supply of petroleum.

"The issue involved is one which demands recognition not only of the effect upon a substantial industry and the consuming public, but, perhaps of more importance, upon the national security," he said.

Although Congress is in recess, many of its committees are active and, if sufficiently impressed, one or more of them readily could initiate an investigation of the matter almost immediately.

The importance of the issue raised by Brown was emphasized by Department of Commerce figures showing that exports of seamless and welded casing and oil line pipe during the first half of this year totaled 166,293 tons, only 13,488 tons short of the exports of those commodities for all of 1946. Nearly two-thirds of the pipe went to three areas: 68,425 tons to Venezuela in six months against 69,580 tons for all of last year; 15,909 tons to the Middle East against 18,420 tons, and 19,074 tons to Mexico against 5062 tons.

Crude Oil Production in the United States

(Estimates compiled by WORLD OIL. All figures indicate daily averages in barrels.)

STATE OR DISTRICT	PRODUCTION IN WEEK ENDED Sept. 6	Aug. 30
Alabama	1,000	1,100
Arkansas	75,700	76,000
California	924,200	927,400
Colorado	49,000	48,900
Florida	1,100	1,100
Illinois	178,900	171,300
Indiana	17,000	17,000
Kansas	284,750	303,750
Kentucky	24,500	25,200
Louisiana	433,150	429,750
North Louisiana	100,925	99,700
South Louisiana	332,225	330,050
Michigan	42,500	43,000
Mississippi	101,000	101,450
Missouri	100	100
Montana	24,000	23,800
Nebraska	550	550
New Mexico	116,500	108,550
New York	13,000	13,050
Ohio	9,200	9,100
Oklahoma	396,300	393,250
Pennsylvania	34,000	34,500
Tennessee	25	25
Texas	2,328,675	2,306,050
Texas R. R. Comm. Districts:		
Dist. 1—South Central	24,150	23,600
Dist. 2—Middle Gulf Coast	160,500	161,200
Dist. 3—Upper Gulf Coast	498,000	487,400
Dist. 4—Lower Gulf-S.W.	246,700	245,200
Dist. 5—East Central	40,700	39,500
Dist. 6—East Texas Field	310,250	324,000
Dist. 6—Rest of Northeast	118,200	116,800
Dist. 7-B—North Central	40,750	39,400
Dist. 7-C—West Central	41,000	39,600
Dist. 8—West	634,950	618,200
Dist. 9—North	127,625	127,550
Dist. 10—Panhandle	85,850	83,600
Virginia	100	150
West Virginia	7,750	7,500
Wyoming	121,000	122,000
Total United States	5,184,000	5,164,575

Total stocks, foreign and domestic, August 30, as reported by the Bureau of Mines were 228,281,000 barrels.

Arguments On Big Inch Lines Operation Delayed by FPC

Oral argument on the application of Texas Eastern Transmission Corporation to operate the Big Inch lines has been deferred by the Federal Power Commission from September 22 to 25.

Meanwhile, the commission has granted a temporary authorization to East Ohio Gas Company to construct 84 miles of 20-inch pipe line to receive gas from the Big Inch lines, and will hold a hearing on a permanent certificate for the $3,200,000 line September 17.

35-Mile Utah Line Planned By Mountain Fuel Supply

Mountain Fuel Supply Company, distributor of Utah and Wyoming natural gas in the Salt Lake City area, has announced construction of approximately 35 miles of gas line from a main line junction to the towns of Provo, Orem, Springville, Lincoln and Spanish Fork, Utah. The new line will cost approximately $850,000 and construction will start next spring.

P. C. Spencer Heads Sinclair Pipe Line Organization

H. F. Sinclair, president of Sinclair Oil Corporation and Sinclair Refining Company, has resigned the presidency of Sinclair Refining Company and will be succeeded by P. C. Spencer.

P. C. Spencer

Spencer will head the organization which includes the crude and products pipe line transportation, refining and marketing operations of the most important subsidiary of Sinclair Oil Corporation. This company last year transported more than 111 million barrels of crude and refined products in its pipe lines, and refined and marketed more than 4 billion gallons of products.

Spencer has spent almost his entire life in various capacities in the oil and gas industries. Following his graduation from the University of Nebraska in 1916 he served in the U. S. Army in World War I. Later he became secretary to U. S. Senator Francis E. Warren of Wyoming. His active connection with the oil business began in 1922 when he joined the Producers and Refiners Corporation. In addition to his activities in the oil business, Spencer has held executive positions in important natural gas companies for a number of years, including president of Southwestern Development Company, president of Canadian River Gas Company, and vice president and director of Colorado Interstate Gas Company. With the acquisition of the Prairie companies, of which Producers and Refiners Corporation was a subsidiary, Spencer became active in the Sinclair organization, moving to New York in 1934, and was elected general counsel of the corporation in 1946.

127-Mile Maine Products Line Planned by Socony-Vacuum

Socony-Vacuum Oil Company plans to construct a 127-mile line to assure a steady supply of petroleum products for a large portion of Maine, and replace barges transporting gasoline, kerosine, and fuel oil from the company's marine terminal at South Portland.

Originating at the terminal, the line will consist of 61 miles of six-inch pipe to Hallowell, near Augusta, and 66 miles of four-inch from there to Bangor. It will serve Lewiston, and have a potential capacity of close to 11,500 barrels a day. The new line and supplementary facilities, including a "bleeder" plant on a four-acre site at Auburn, will cost nearly $1 million. The "bleeder" plant will draw off supplies from a spur on the main pipe line and store them for subsequent distribution by trucks. Construction will begin as soon as weather conditions permit in 1948.

Mexican President Reveals Terms of Pay for Expropriated Shell Properties

In his annual report to Congress on the "state of the nation" September 1, President Miguel Aleman of Mexico disclosed terms of an agreement signed by the Mexican government with the Royal Dutch-Shell interests covering payment by Mexico for the oil properties of those interests expropriated in March, 1938. The properties included producing and prospective leases, pipe lines, refineries, and other assets held by Mexicana de Petroleos "El Aguila," S. A. (Mexican Eagle Oil Company) and subsidiaries.

The value of the properties has been set at $81,250,000, U. S. currency, as of March 18, 1938, and the government agrees to pay 3 percent per annum since that date.

Payment will be made in 15 installments of $8,689,257.85, U. S., starting on September 18, 1948, payable annually until the same date in 1962.

Thus the total sum to be paid to the Shell interests for their properties will amount to $130,138,867.75, U. S., including interest.

All taxes consequential to the agreement or to the payments shall be borne by the Mexican government and the government releases Shell from all responsibility as to pending and future governmental or private claims. Shell, in return, surrenders all claims against the Mexican government.

This settlement concluded negotiations regarding payment for the oil properties expropriated nearly a decade ago. Terms for compensation to American companies were agreed upon by the Mexican and U. S. governments in September, 1943, and involved a total sum of $23,995,991, U. S. currency, as of March 18, 1938, plus interest at 3 percent per annum from that date. Including the interest, the payments to the American companies will aggregate approximately $29,137,700. In his recent address President Aleman stated that only $4,085,000 remained as the unpaid balance due under the settlement for the expropriated American oil properties. That amount is to be paid in a final annual installment on September 30 of this year, under terms of the agreement. Of the compensation of about $24 million to the American companies, exclusive of interest, almost $18½ million was credited to Standard Oil Company (New Jersey) subsidiaries and approximately $3½ million to Standard Oil Company of California subsidiaries, while each of several other groups was awarded less than $1 million.

The greater compensation to be received by the Shell interests reflects the dominant position they held in the petroleum industry of Mexico, their holdings having been substantially more extensive than those of any other group. They held refineries in the Tampico, Isthmus, and Mexico City areas, extensive pipe line systems including one from Tampico and Poza Rica fields to Mexico City, and producing properties in all productive districts, including most of the acreage of the prolific Poza Rica field, partially developed at the time of the expropriation. In the negotiations following expropriation, the Shell interests originally claimed that their properties in Mexico had a value of approximately $250 million.

The base settlements of roundly 081 million for the British-Dutch and $24 million for the American properties total $105 million. The British-Dutch part represents 77 percent of the total and the American part 23 percent. This ratio appears to be fairly well in line with the indicated relative values of the two groups, suggesting that similar yardsticks were employed in determining the amounts of the settlements. In the case of proved crude reserves, for example, the British-Dutch holdings apparently were somewhere around three fourths of the total in Mexico. The U. S. oil mission to Mexico in 1942 estimated Mexico's total reserves at 626 million barrels and those of Poza Rica alone at 450 million. Two years ago Avila Camacho, then president of Mexico, estimated the country's crude reserves at 870 million barrels, and though he did not break down the total, it apparently included 550 to 600 million barrels for Poza Rica and over 100 million in the Isthmus.

Since the oil properties were expropriated, they have been operated by Petroleos Mexicanos (Pemex), a government corporation. In his 17,000-word address, President Aleman embodied a short report on the operations and plans of this company. Pointing out the importance of oil to the economy of the country, he said that vigorous efforts would be made by Pemex to expand the petroleum industry.

Objectives of Petroleos Mexicanos, according to President Aleman, have included reorganization of its administration and the expansion of its exploration program, including the drilling of more wells in the search for new fields. Locations have been made for 100 wells in Northeast Mexico, the Tampico-Tuxpan area, the Isthmus, the state of Chihuahua, and Lower California.

"There has been initiated a program of restoration for our petroleum fleet," the report stated, Pemex having managed "notwithstanding the limitations of marine transportation, to maintain supplies to all the distribution plants on the Gulf and on the Pacific.

"All possible efforts have been made to supply proportionally the demand for petroleum products in the different regions of the republic. It is expected that 100-octane aviation gasoline will be produced before the end of the year. Work is in progress on the pipe line from Poza Rica to Salamanca and on the refinery at the latter locality. Plans have been compelted for the construction of a natural gas pipe line between Poza Rica and Mexico City.

"The domestic demand for petroleum products has continued to go higher.

In regard to labor relations, the report was optimistic. "It is the intention of Petroleos Mexicanos to comply with the specifications of the Workers' Collective Contract and to protect the rights of the workers. When the syndicate asked for revision of the contract, requesting increase of salaries and loans, it was necessary to make a decision of economic importance. Fortunately, the parties arrived at an agreement which established social peace between the company and its workers."

Sidon Will Be Terminal of Trans-Arabian Pipe Line

Sidon, 30 miles south of Beirut in Lebanon, was chosen as the Mediterranean terminal of the Trans-Arabian pipe line following signing of transit rights with Syria September 1.

The agreement was signed by Premier Jamil Mardam and William J. Lanahan, Middle East representative of Trans-Arabian Pipeline Company, subject to ratification by the Syrian Parliament.

Thus, all negotiations have been completed for construction of the world's largest pipe line. Syria's numerous conditions revived discussion of a Palestine terminal, possibly at Acre, which Trans-Arabian had hoped to avoid because of the unsettled political condition of that country.

Trans-Arabian Pipe line has previously signed an agreement with Lebanon for terminal and port rights amounting to $180,000 a year, and negotiated transit rights with Transjordan for $250,000 annually. Saudi Arabia was the first to sign, on July 11.

Syria and Lebanon discussions, in which Syria demanded location of the terminal within her boundaries and payment of the annual transit fee in oil to be refined and sold inside the country, were recently compromised, the two countries agreeing to share jointly in the income from the terminus, probably more than $600,000 annually. But further problems arose, and Trans-Arabian was faced with a $5000 daily forfeit if delay in Syrian agreements prevented start of construction on schedule.

Construction is now under way near Dhahran, with Burt Hull directing preliminary work and a final survey being made. Aircraft have been used extensively in mapping the 1000-mile line, completion of which is scheduled for January 1, 1950, making available 300,000 barrels of oil daily for Europe.

Origin of the line it at Abqaiq field, Saudi Arabia, trending northwest from there across Transjordan and Syria to terminate at Sidon. Williams Brothers, Tulsa, contractors for the western end of the line, will bury their section, though much of the remainder of the line is expected to be laid above the ground, over rugged desert country all the way. Delivery of the record 30- and 31-inch pipe, fabricated by Consolidated Steel Corporation, Los Angeles, has already begun.

By J. E. KASTROP and WILLIAM P. STERNE
Staff Writers

World's Deepest Well TESTS MEN AND EQUIPMENT

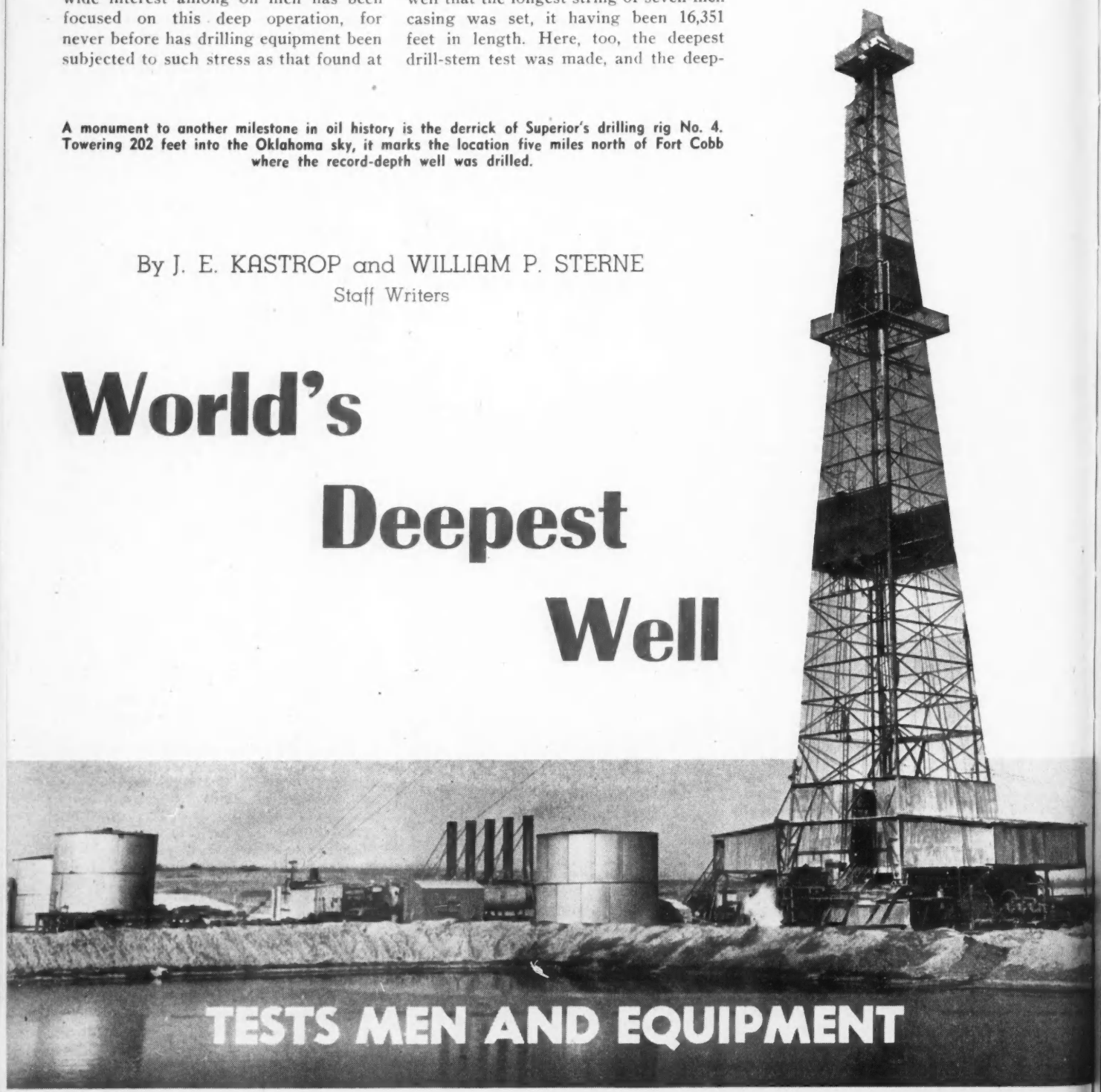
OUTSTANDING performance of drilling equipment combined with the determination and skill of the oil man are the most significant features of the deepest well record established by The Superior Oil Company of California. Approximately a year and nine days were actually spent in rotating for making hole or coring to the record depth of 17,823 feet, attained in the Weller 51-11, located five miles north of Fort Cobb in Caddo County, Oklahoma.

Although several pieces of the equipment were "extra heay-duty" units, this "15,000-foot" rig consisted for the most part of regularly-marketed oil well drilling machinery, some of which had been in service as long as ten years. Nationwide interest among oil men has been focused on this deep operation, for never before has drilling equipment been subjected to such stress as that found at Weller 51-11. Safety factor limits had been approached in some parts, but drilling continued to progress, and the test definitely has proven that present-day equipment can be depended upon to go below 17,000 feet provided, of course, precautions and adequate care are exercised. The problem of going deeper now rests squarely upon the shoulders of the matallurgical industry which must develop metals of higher tensile strength suitable for modern drilling methods.

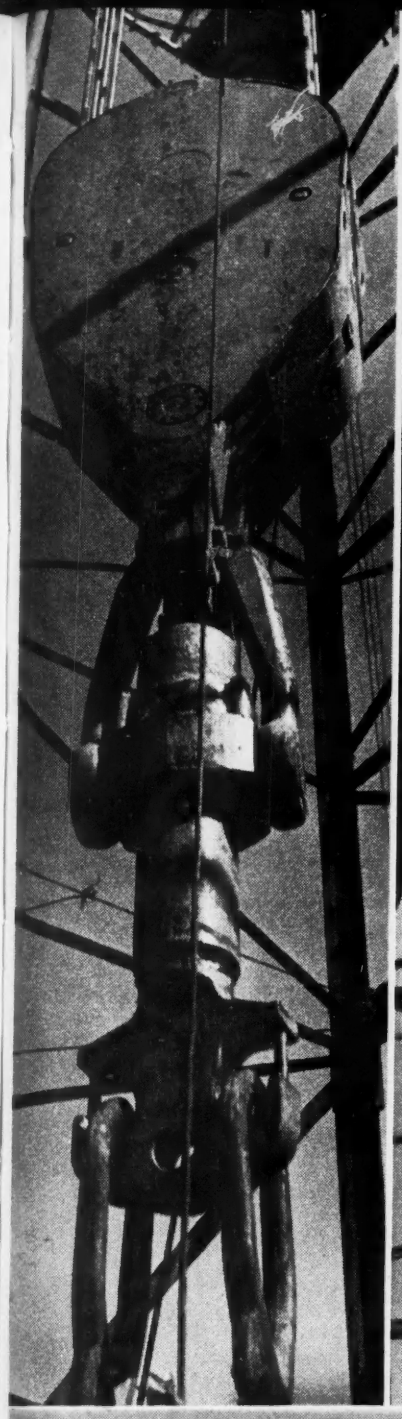
Other Records Set

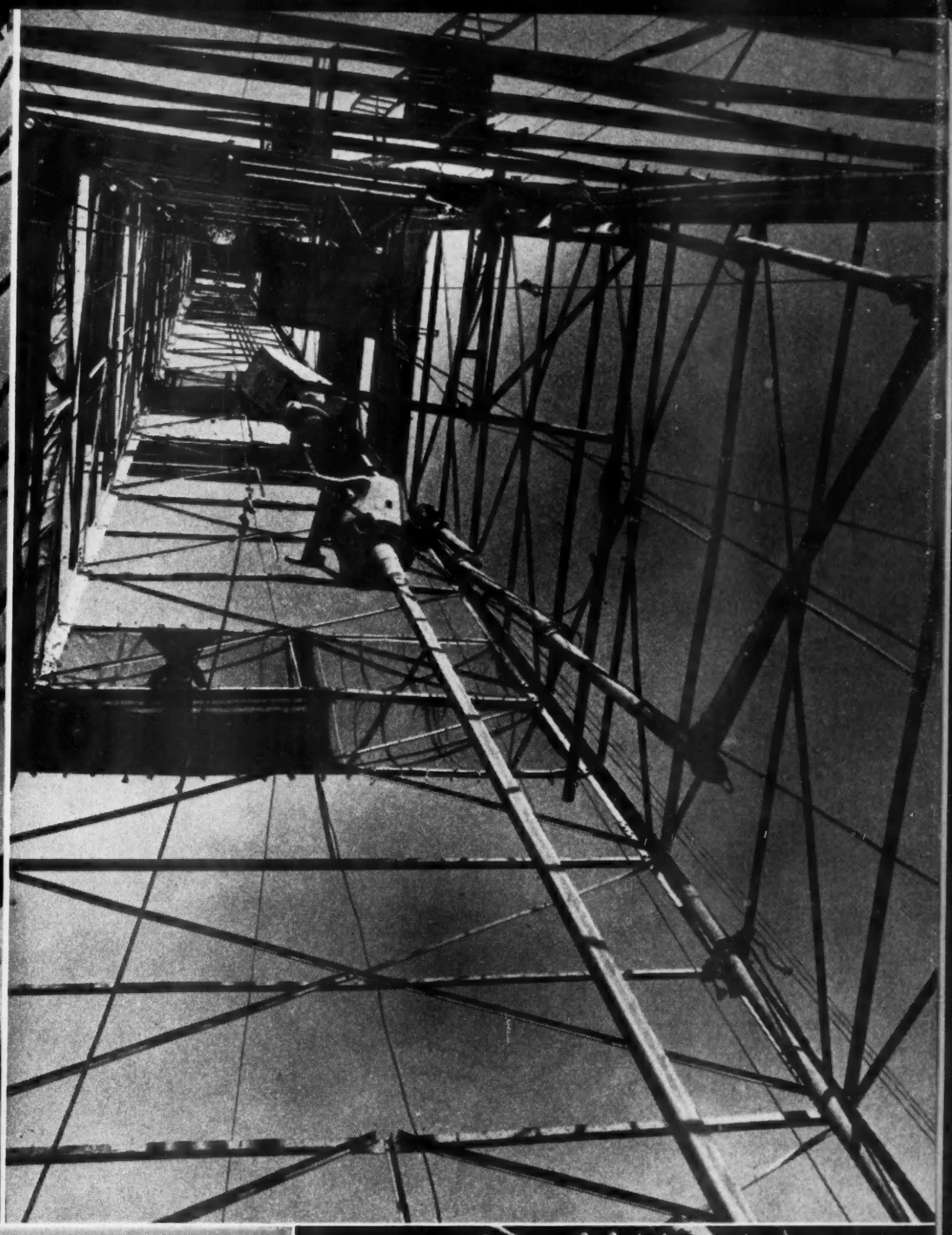
The Superior wildcat has several records to its credit, the most outstanding being that of depth. It was in this same well that the longest string of seven-inch casing was set, it having been 16,351 feet in length. Here, too, the deepest drill-stem test was made, and the deepest fishing job ever attempted in a well met with success below 16,000 feet. The heaviest string of 9⅝-inch casing ever run in a well was cemented at 10,240 feet in almost 9,000 feet of open hole. Total weight of the string was slightly more than 500,000 pounds.

Such achievements are paralleled in operation by the men directly responsible for these records. Perseverance, constant vigilance and determination have been combined with engineering skill to attain these goals. The three select drilling crews were under the direct supervision of C. L. Corely, drilling



A monument to another milestone in oil history is the derrick of Superior's drilling rig No. 4. Towering 202 feet into the Oklahoma sky, it marks the location five miles north of Fort Cobb where the record-depth well was drilled.



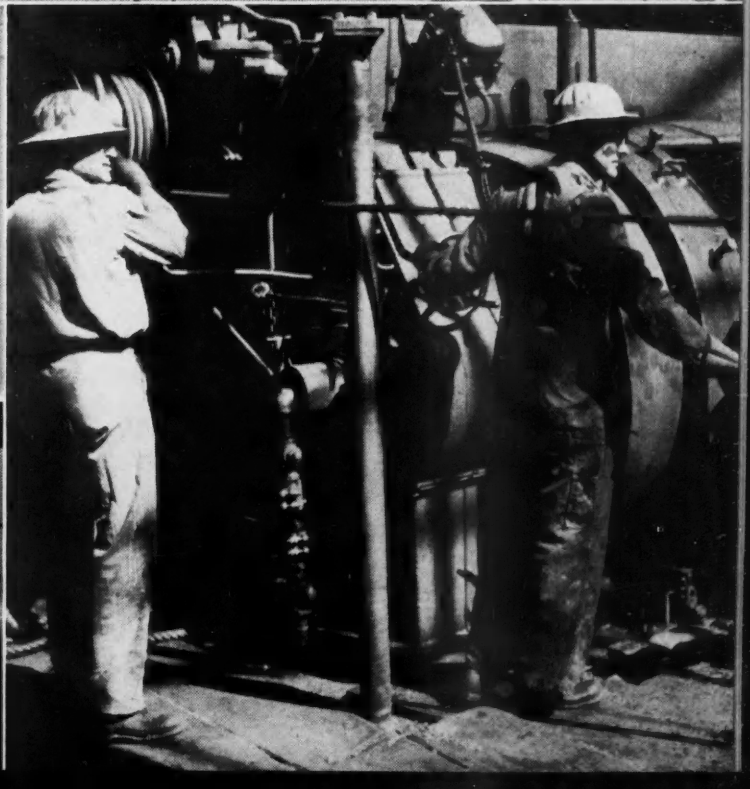


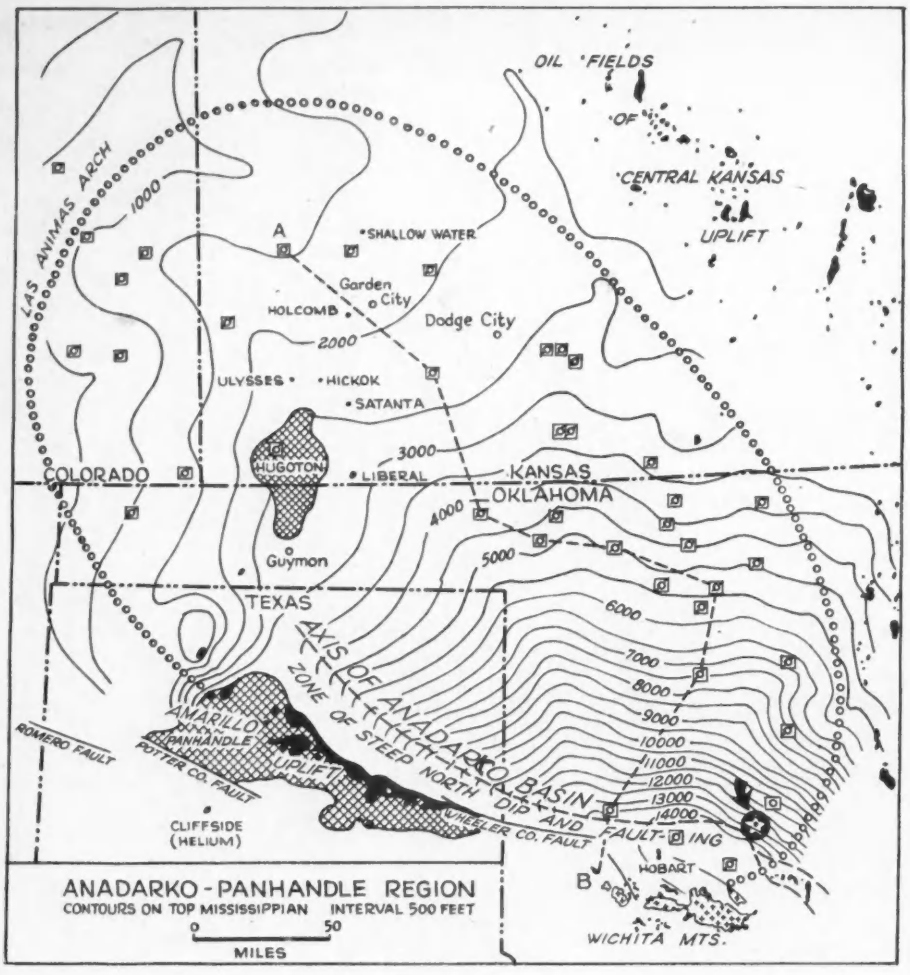
Top left: Traveling block . . . six sheaves with a capacity of 500 tons. Immediately below the traveling block is a "rotary connector," which has same function as a hook . . . capacity 300 tons.

Top right: Looking up in the 176-foot derrick on the Weller 51-11. Unusual on drilling rigs is the middle board shown opposite the traveling block. Beyond is the thribble board. The unusually-long stands of 3½-inch pipe (about 126 feet per stand) required support in the middle when racked in the derrick.

Lower right: "Going in the hole" below 17,000 feet with Driller J. B. Short at the brake and C. W. Hill on the cat head line. The control just above Short's left shoulder is an energizing switch which gives the dynamic brake its power to halt heavy loads.

Below: Day tour crew, left to right, J. B. Short, driller; Charley Reese, lead tong man; R. L. Calvert, derrickman; F. E. Wiley, middle-board man; W. G. Cooper, fireman; Neff Brewer, backup tong man; and C. W. Hill, cathead man.





superintendent at Fort Cobb, Okla., and J. C. Cody, vice president in charge of production, Pacific Division, for Superior at Los Angeles. The crew established an outstanding safety record for deep well drilling. In more than a year of continuous operation there was no serious accident. Precautions prescribed by the company plus drilling experience of the crews made this remarkable record possible.

Well History

Spudded April 4, 1945, Weller 51-11 was drilled 1540 feet where 13⅜-inch surface casing was cemented. The hole was deepened to 10,317 feet with 12½-inch bits before 9⅝-inch intermediate casing was set. Excellent conditions of the bore made it possible to carry 8777 feet of open hole.

Drilling continued with 8⅜-inch rock bits. At about 15,000 feet, the 4½-inch drill pipe was gradually replaced by 3½-inch, 15.50 pound, Grade E, external upset pipe, the latter remaining in service to the final depth.

The record string of seven-inch com-

Figure 1. General features of the Anadarko basin (approximate extent indicated by area surrounded by small circles), showing the location of Superior's Weller 51-11 (encircled star). Dotted line indicates line along which the cross-section shown in Figure 2 was taken.

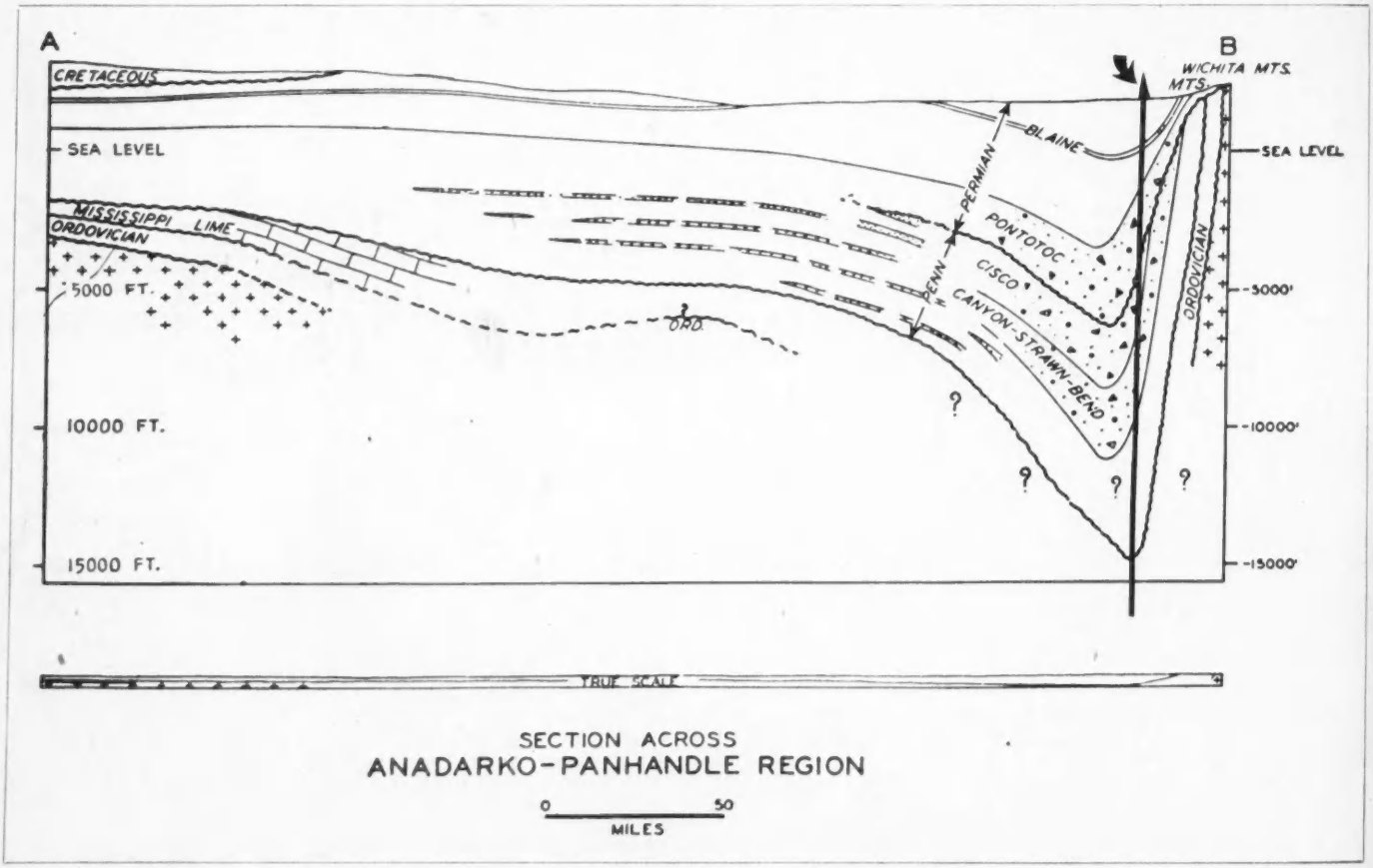
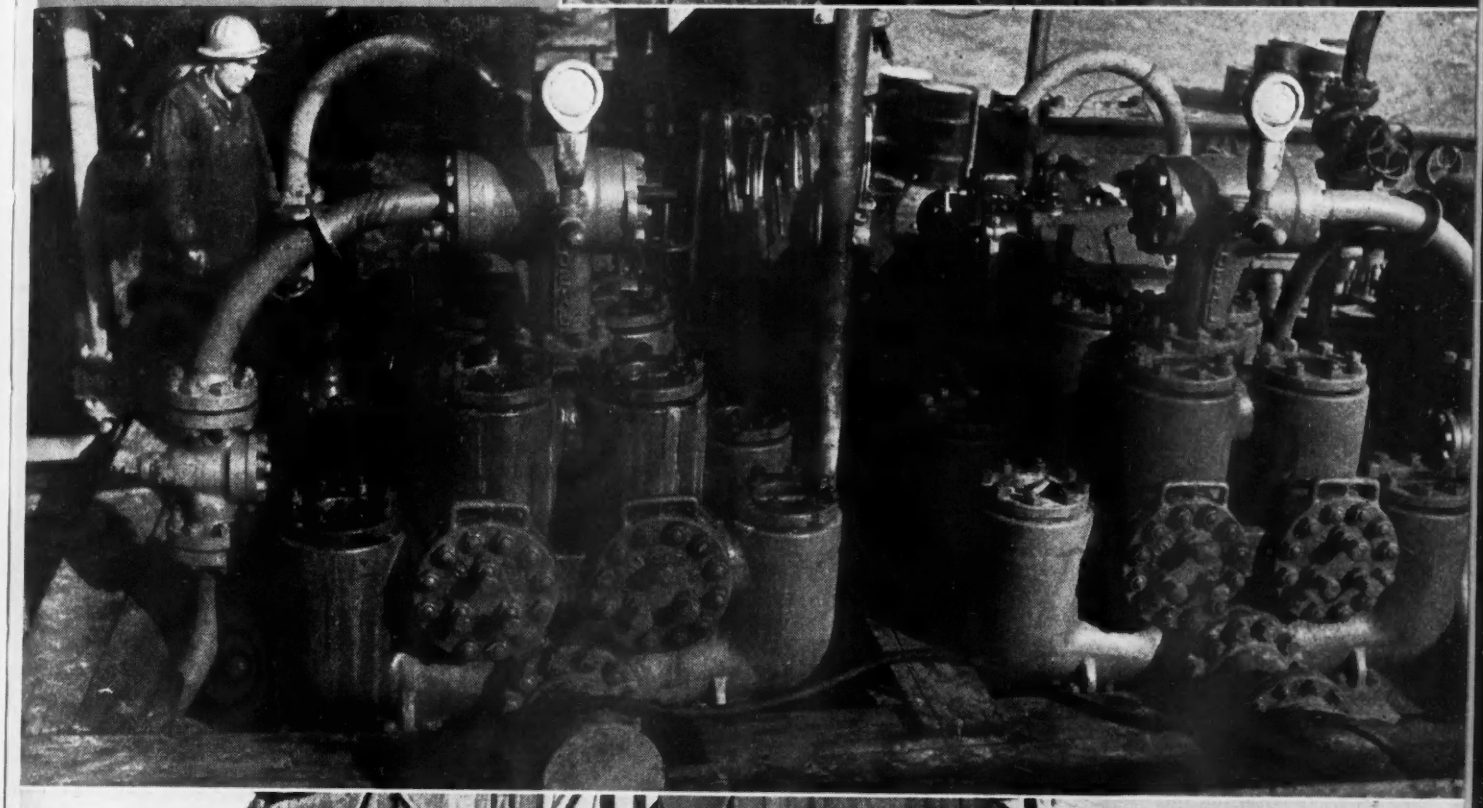


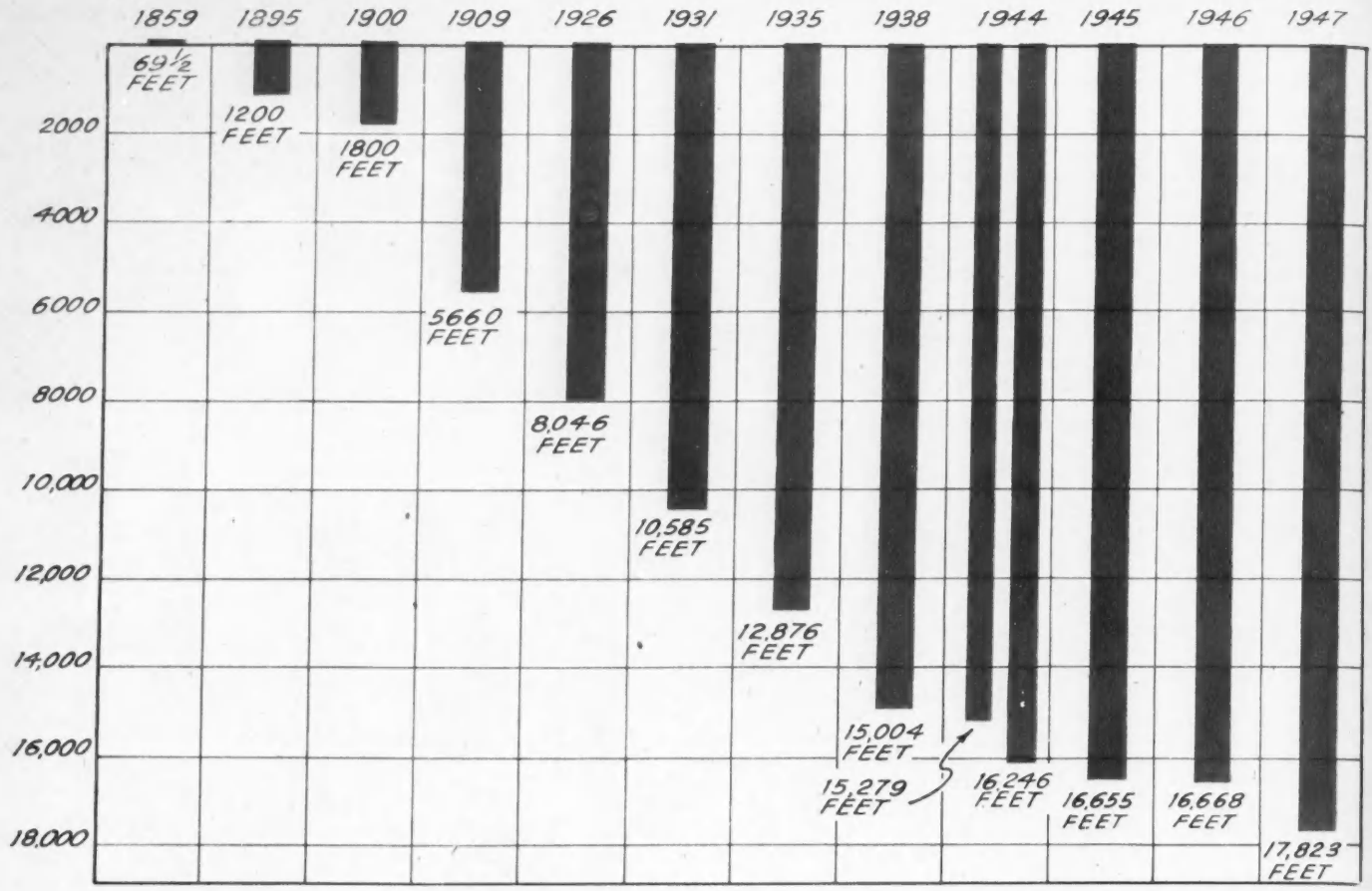
Figure 2. Generalized structural cross-section of the Anadarko basin as taken along line A-B of Figure 1. Arrow indicates probable location of the Weller 51-11 on the structure. (Vertical scale enlarged to show features of the basin.) Answers to the formation question marks are now known, and when released, will provide important data for drilling future wells.

Right: Mud mixing pit with encrustations of hardened mud almost an inch thick forming an inside lining. The extremely high viscosity of the mud used in drilling below 17,000 feet is illustrated here. The hopper end storage of dry mud may be seen in the upper left, while the mud mixing pump is shown in the upper right. This pump also transfers all mixed mud from the pit into the mud circulating tanks.

Center: Mud end of the two 15½ x 8½ x 20-inch mud pumps located beneath the derrick floor and adjacent to the mud circulating tanks. Substructure in the background is that of the auxiliary drawworks engine. Long-radius bends in the mud line are designed to eliminate cutting of the pipe by the high-pressure mud.

Below: Exterior view of the mud circulating system, showing the electrically-driven shale shakers mounted on top of one of the two 300-barrel circulating mud tanks. Two such tanks provided an ample supply of mud and enabled the crew to check the mud volume to detect any loss of mud in the hole.





World's depth records.

bination-weight casing was run in the hole January 1, to a total depth of 16,351 feet, with 12 lines strung in the 500-ton capacity traveling block. Total running time was 27 hours. Approximately 650 sacks of bulk cement were mixed and pumped down in 74 minutes, a fast rate necessitated by the relatively high bottom-hole temperature of 360° F. Running casing and cementing operations were carried out in almost zero weather conditions, a factor which made the job hazardous and more difficult. An unusually straight hole, plus precautions used in testing the casing and cleaning the joints prior to use, contributed to the success of the operation. The cement plug was drilled out with a 5¾-inch rock bit and the hole continued at this size to its total depth.

Fishing Job

On March 15, with total depth 17,236 feet, the drill stem stuck after the bit had been raised ten feet off bottom. Details of the unusual fishing job that followed are presented in this issue in a special article beginning on page 36.

On the 52nd day of the difficult fishing operation, the drill collars were successfully recovered. Drilling proceeded smoothly, and on May 15 it was reported that 64 feet of hole had been made in the past 48 hours. While drilling at 17,659 feet, the rate of penetration averaged a foot per hour, unusually high compared with 1½ to 5 feet per day for depths above 17,000 feet. A total of 169 feet had been drilled during the preceding six days.

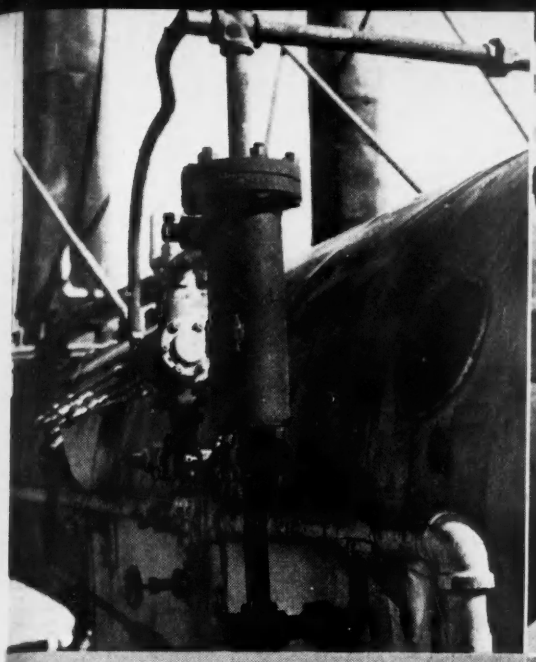
The only remaining difficulty down to total depth, which proved to be minor, was encountered at 17,711 feet when a cone from one of the rock bits was lost in the hole. A junk basket was run to bottom and successfully recovered the cone. Drilling proceeded to the final depth of 17,823 feet, attained June 23. Drilling operations were suspended and the well thoroughly logged. Every formation from bottom to top was tested. Some oil and gas shows were reported at approximately 10,200 feet, presumably in the Pennsylvanian section, but no commercial production was encountered.

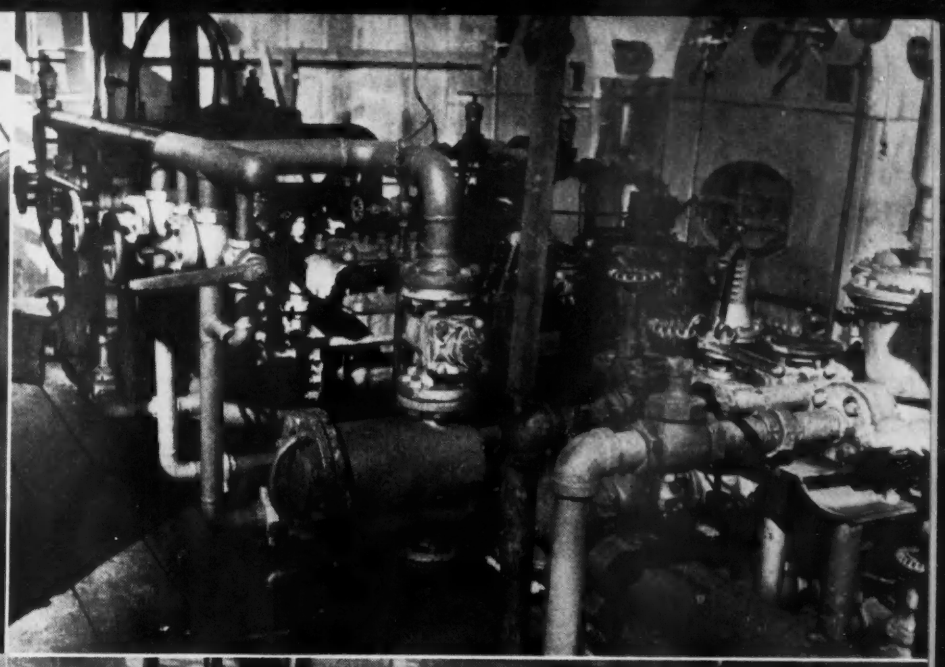
Fourteen cores were taken during the entire drilling campaign, but the tops, formation identification, and geological data have not been released. Results of the tests are being studied carefully and checked, and when the complete report has been made, it will be released to the industry. While these data are being compiled, it is known that the well failed to produce commercially principally because the formations penetrated were entirely too tight to contain or give up great quantities of oil or gas.

Bit Record

A total of 315 bits, exclusive of core heads, were used in drilling to the total depth, which is 1155 feet deeper than the previous depth record holder, Pacific Western Oil Company National Royalties 1, located in Kern County, California, where a depth of 16,668 feet was reached. In the unusually hard formations below 15,000 feet in the Oklahoma well, the average bit life ranged from 1½ to five feet of hole. Weight on the bit was concentrated at the bottom through the use of seven drill stem collars totaling 219 feet in length. Precautions against overloading the bit contributed to the almost vertical hole. According to well surveys, not more than three degrees off the vertical was recorded, except at 14,500 feet where the hole deviated four degrees. This deviation gradually decreased to approximately two degrees to total depth.

Breaking strength of the wire rope and tensile strength of the drill pipe appear to have been critical factors so far as equipment is concerned, with wire rope topping the list. Recommended safety factors for wire rope and maxi-





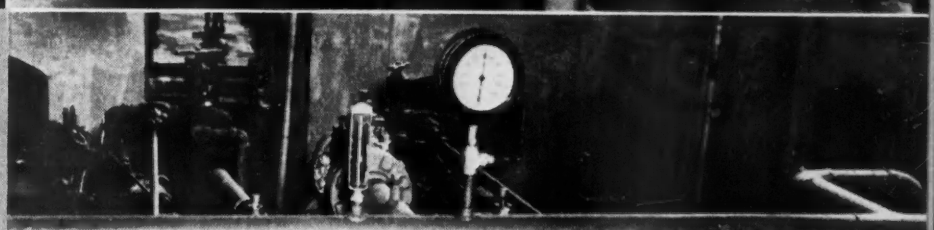
Above: Automatic water level control assembly mounted on the side of each boiler. Cylindrical housing contains float body which rises and falls with water level in the boiler. As it falls, it releases a valve in the system which permits steam to pass through a long horizontal copper tube. Expansion of the copper tube opens the feed water line, thus permitting water to enter the boiler. As the water level rises, the flow of steam through the copper tube is shut off, and the tube returns to its normal length, thus closing the valve to stop the flow of water into the boiler.

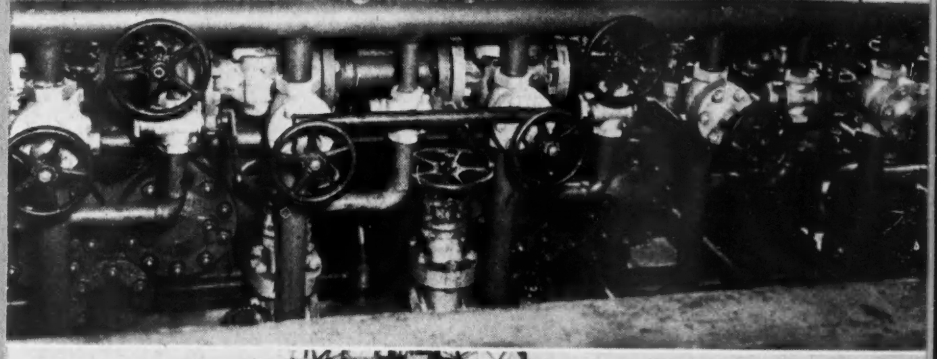
Top right: Closeup of automatic control equipment on the boilers, showing the boiler feed-water manifold at left. Boiler feed-water pumps are located in the center background.

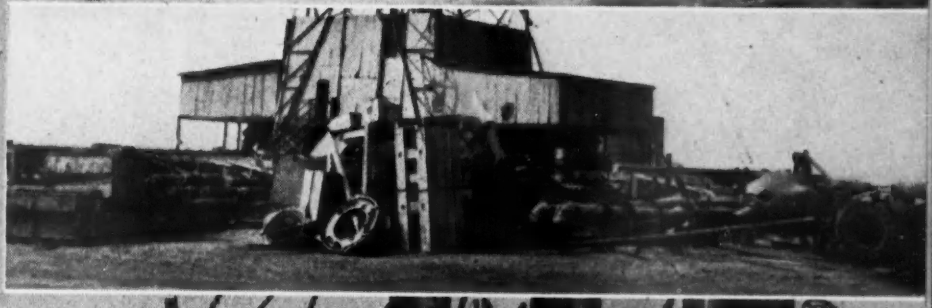
Top center: Boiler feed-water control manifold, with feed-water pumps in the background. Flow of water into each boiler is controlled at this manifold.

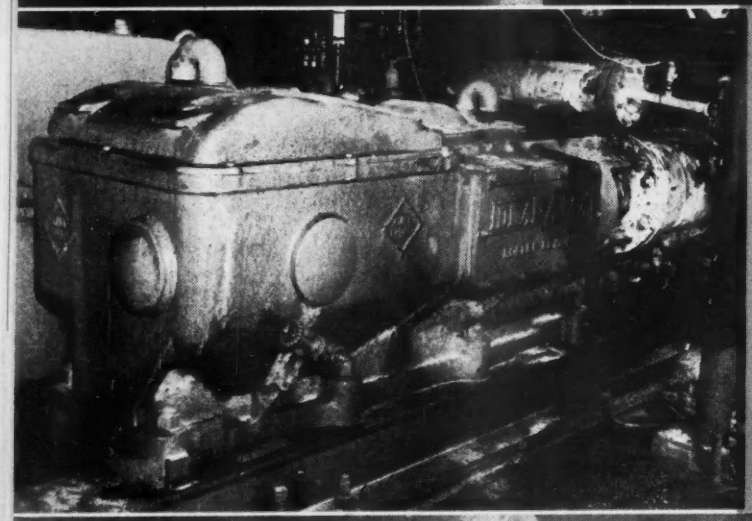
Lower center: Graphic evidence of the vast surplus of material stored at the location to reduce to a minimum shutdown time due to mechanical failures. Everything from blowout preventers, swivels, rotary hose, hydraulic brakes, drill collars down to the smallest piece of gear that could possibly cause work stoppage has been duplicated.

Below: Fire box end of the boiler battery. Combination gas-oil burners were used, and the well started with purchased gas. Due to low gas pressure, fuel oil was substituted. Note the bonnets over the last two boiler pressure gauges. The temperature during the winter months dropped to such a degree that the fluid would freeze up, resulting in erroneous readings. The bonnet protected the gauges from the north wind.





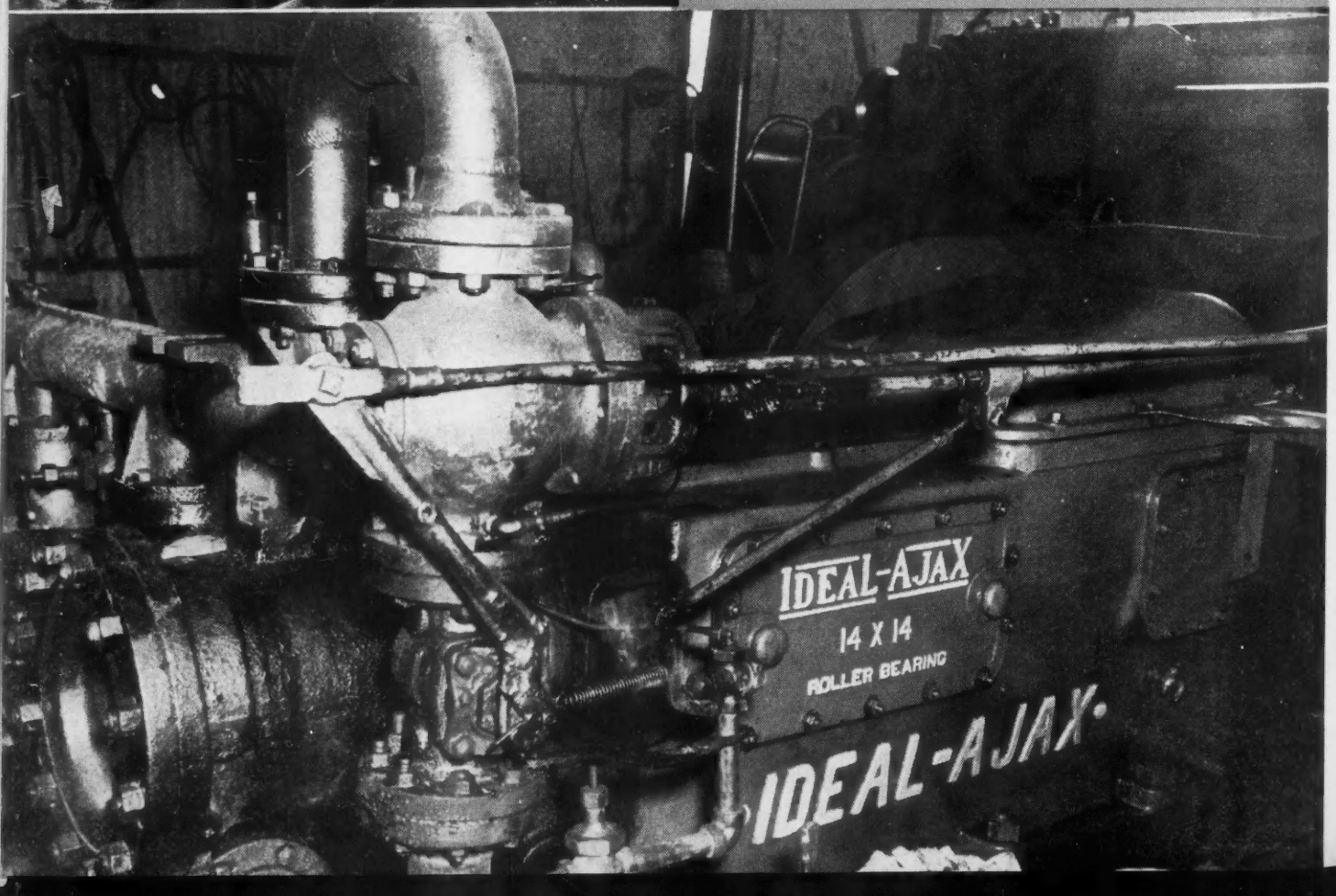




ABOVE: Auxiliary drawworks engine standing ready for use at all times. This 12 x 12-inch engine has seen relatively little service in drilling the Weller 51-11, due to lack of trouble on the main drawworks engine. In the left background is the sand line unit, which is also driven by the auxiliary drawworks engine.

LEFT: Located below the derrick floor is this 12 x 12-inch engine which drives the rotary table through reduction gears and clutch system. This shows the manner in which the engine was mounted on the solid concrete foundation. Throttle control for this engine is located at the driller's position.

BELOW: Steam end of the main drawworks engine, with throttling and emergency cut-off valve in foreground. After more than ten years' service, this 14 x 14-inch engine provided power to drill the world's deepest well.



mum drilling depths for the 3½-inch, Grade E drill pipe were approached. Buoyant effects of the 11-pound drilling mud considerably reduced the resultant weight of the drill pipe as well as the load on the wire rope.

Beyond the 15,000-foot depth, added precautions in the use of wire rope in the hoisting system were followed. The method employed is unique and eliminates continued wear at concentrated points. The line was moved through the system to spread wear along the entire length of the line.

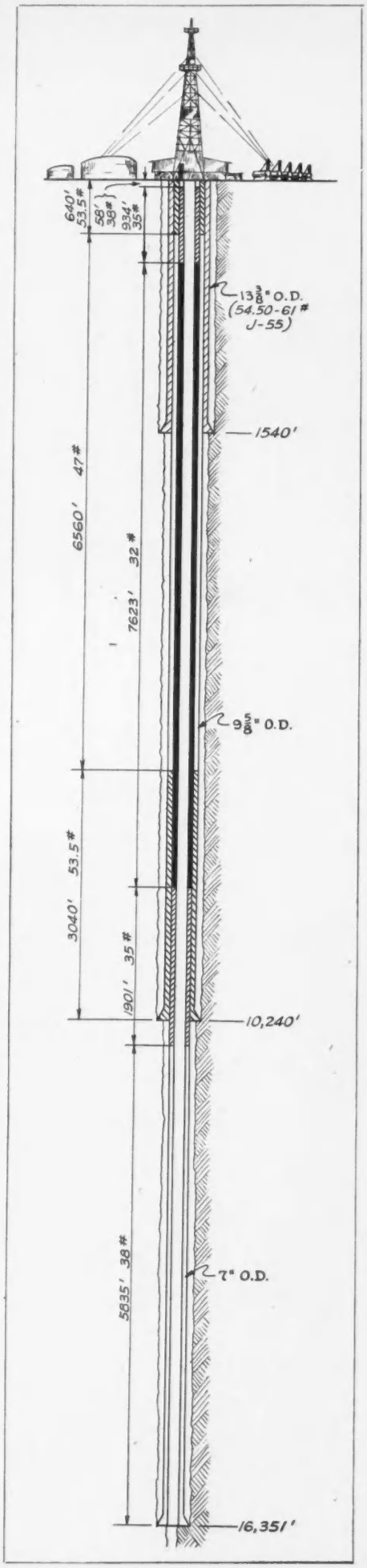
A 2500-foot spool of 1¼-inch, hemp center, improved plow steel line was fed into the hoisting system. Several layers were spooled onto the hoisting drawworks, then the line was threaded through the crown and traveling blocks to make up eight lines, and finally terminated at the auxiliary drawworks drum, around which the remainder of the 2500-foot reel was spooled. In this manner, the auxiliary drawworks acted as a dead line anchor. The practice followed was to cut off at least 75 feet of the line from the main drawworks drum after four complete round trips had been made. This 75-foot section was replaced by unreeling that amount from the drum of the auxiliary drawworks. In this manner, the wearing points along the line were moved successively down to the active drawworks drum, finally being taken out of the system.

Mud and Circulatory System Important

The drilling mud was under the supervision of mud engineers who made more than 1000 pilot tests and makeup water analyses before the treating program was planned. For the unusual conditions encountered, a mud having an average weight of 11 pounds per gallon was prepared so that viscosities varied between 75 and 200 seconds during the treating program. Water loss was held to about 5 c.c.

Design of the mud circulatory system was ideal for the proper control of the drilling fluids. Two unitized 300-barrel circulating tanks eliminated surface contamination of the fluids, while a 1000-barrel reserve tank held sufficient mud to care for emergency situations. Mud was mixed in a separate pit and pumped into the system by a 14½x7½x18-inch mixing pump used specifically for this purpose. Proper mud circulation was assured at all times by two duplex, 15½x8½x20-inch steam pumps, which could be compounded easily into the dual mud lines.

A triplex 18x7x20-inch steam pump was included in the system as a standby and could be placed into service instantly. A dual standpipe assembly containing both rubber and steel rotary hose was provided to reduce shutdown time in case of hose failure. Two electrically-driven shale shakers mounted side by side atop one of the mud circulating tanks handled the relatively large volumes of mud while drilling near the surface; only one being required while drilling the 5¾-inch hole.



Weller 51-11 was drilled from a 176-foot derrick having a 32-foot base and 11-foot substructure. This and other equipment were moved into Oklahoma from Wyoming. The rig had been used to drill several wells in California and one other test in Oklahoma before it was set up on the Caddo County location. Transportation of this material required the use of eight railroad flat cars. After a year on location, with various pieces of equipment being added from time to time, it is estimated that about twice the number of cars would be required to haul the accumulated equipment from the location. The rig was one of the most complete in the state, Superior having gone to great lengths to provide adequate materials to keep crews well supplied with extra equipment, thus eliminating shutdown time due to lack of parts.

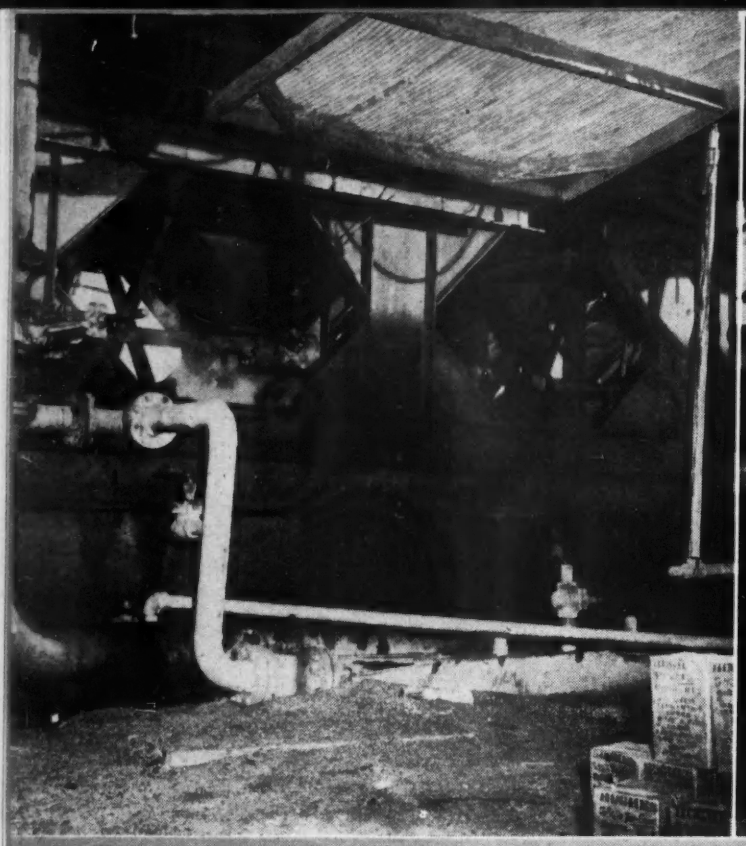
Hoisting equipment consisted of one main and one auxiliary drawworks. The main unit was powered by a 14x14-inch steam engine and the auxiliary by a 12x12-inch engine. The main drawworks was equipped with an electrically operated dynamatic brake, a unit which resembles a large electric motor, operating on the retarding effects of eddy currents set up during rotation.

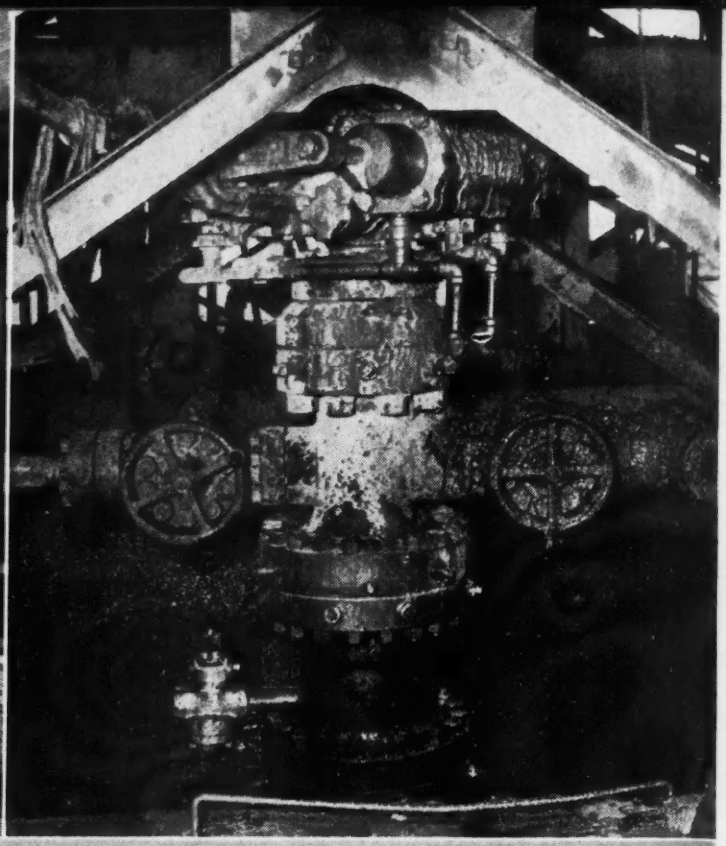
Power Plant

Steam was supplied by five 135-horsepower boilers rated at 350 pounds pressure. During excessive power demands, boiler pressure exceeded 300 pounds, but normally was maintained at 240 pounds. The five boilers were manifolded into one common steam line which transmitted superheated steam to the drawworks, pumps and auxiliary equipment at the rig.

The entire steam power plant was automatically controlled, with manual controls provided in case of breakdown of automatic equipment. Water was supplied by three shallow water wells equipped with regular pumping units driven by gas engines. Two 1000-barrel storage tanks handled all fresh water delivered from these supply wells. From the storage tanks, water was pumped

Figure 3. Schematic diagram showing casing program on the Weller 51-11.

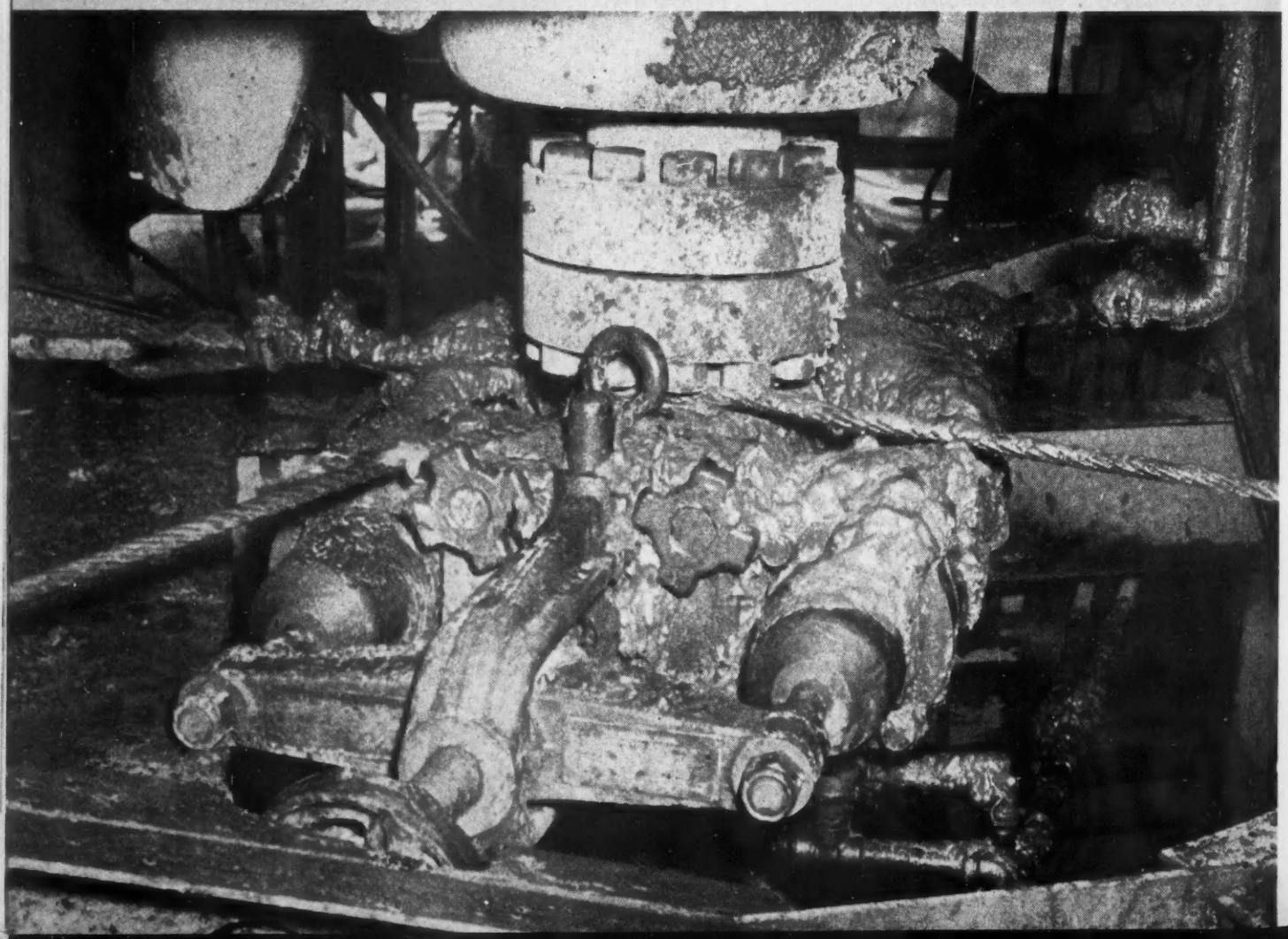




TOP LEFT: In this view looking below the derrick floor may be seen the extra-heavy substructure which supports the main 14 x 14-inch steam engine. Also shown are the steam connections to the main engine and the elevated concrete platform on which the unitized substructure is mounted. This structure provided a stable support for the heavy steam engine which generated continuous vibrations that would have misaligned any other type of foundation during the many months of drilling.

TOP RIGHT: Wellhead equipment—13⅜-inch surface casinghead (just below fluid level in cellar), casing spool and tubing head. On top of this assembly two 23,000-pound test blowout preventers were mounted, the lower preventer shown. Well cellar and foundation for the substructure were of heavily reinforced concrete, a feature which provided greater bearing strength and a more rigid structure.

BELOW: The upper blowout preventer, illustrating method of guying the wellhead equipment in position.

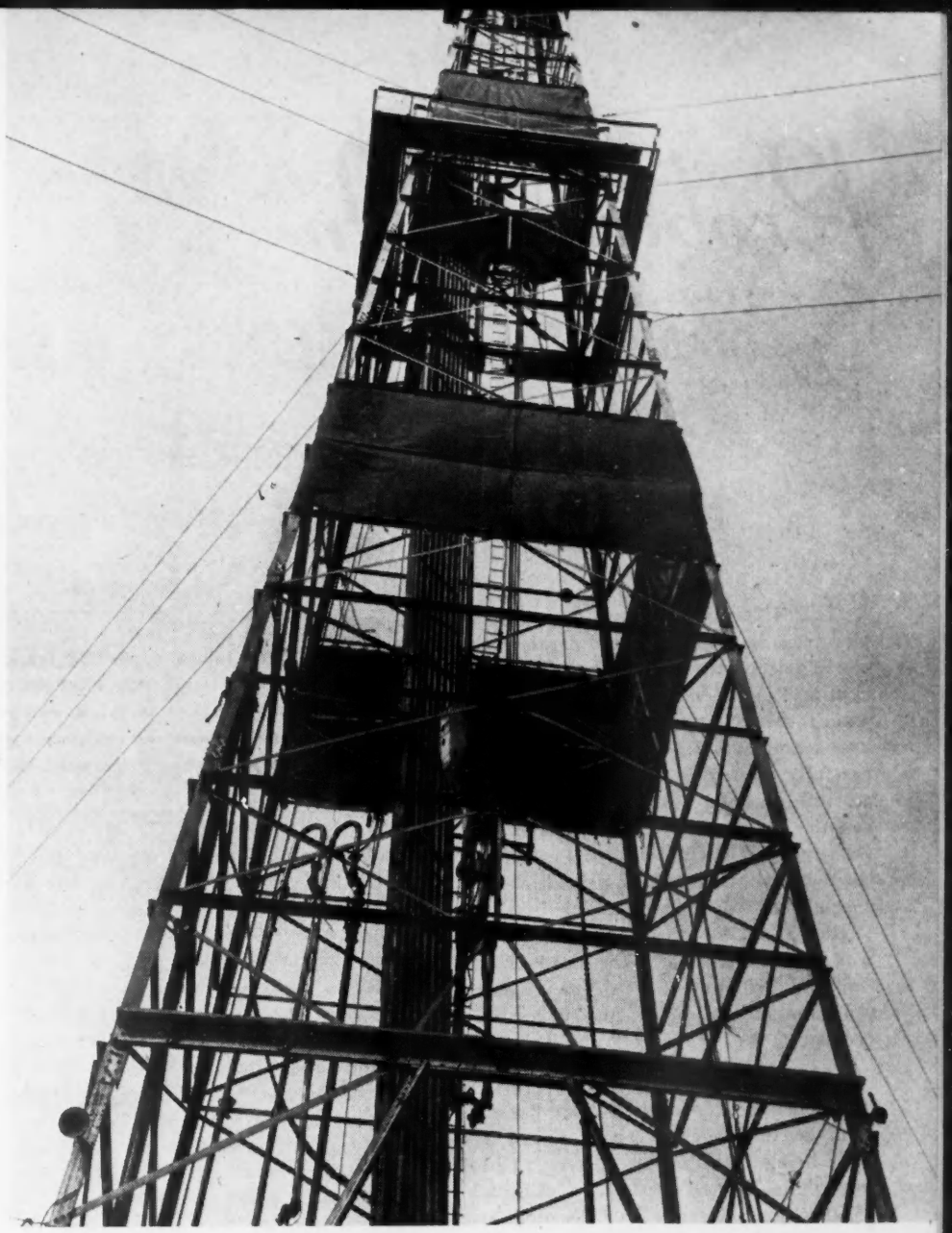


into a 500-barrel treating tank where the firemen added the necessary softening chemicals. From the chemical treating tanks, the feed water passed through a heat exchanger and then into the feed water pumps. These pumps were controlled by the boiler steam pressure and were held at about 515 pounds feed water pressure. The water was delivered by the pumps into the feedwater manifold, from which the five individual feed water lines carried the water to the automatic water level controls. The latter controls consisted of an enclosed float body which varied up and down, depending on the water level in the boilers. As the water level fell, the float dropped, opening a valve to permit a flow of steam to pass through a section of copper tubing. As the tubing expanded, the feed water valve at the boiler was cracked slightly until the water level reached a predetermined point when the valve was again caused to close. Thus, the water level in all five boilers was constantly maintained at the desired level.

Each of the five boilers was equipped with automatic firing controls which maintained steam pressure at a constant value. Sensitive regulators controlled by the boiler steam pressure admitted additional fuel into the fire boxes as the pressure decreased. Boilers were of the fire tube type and each equipped with dual popoff valves.

Ground conditions at the well site were favorable for foundations. Of particular note was the solid concrete slab and cellar beneath the entire derrick floor. Undoubtedly, this type foundation has eliminated many of the ills of the mat type, or of the normal procedure of setting the engine and derrick substructure on 12x12-inch timber placed directly on the surface. After a year's steady drilling with such heavy loads considerable settling would have resulted. No trouble was encountered from the derrick or engine substructure settling, and a clean and efficient appearance was made possible. It was on this concrete foundation that the rotary drive steam engine, a horizontal twin 12x12-inch, was located. In so doing, much wear and tear on the main engine and drawworks was eliminated during drilling operations. The rotary was driven through a reduction gear, housing the clutch, and controlled from the driller's position. Additional floor space resulted from this installation.

Located in NW NW NE 11-8n-12w, Weller 51-11 was drilled "on structure" in the expansive and highly-important Anadarko basin, considered one of the nation's most promising potential oil provinces of today. The basin is believed to be a source of oil and gas discoveries of considerable magnitude with producing formations lying deeply buried in the synclinal trough.



This view, taken shortly after the well depth record had been broken, shows the beginning of a round trip with just a few stands of 3½-inch drill pipe racked. Protection against the cold biting Oklahoma winds was afforded by canvas stripping around three sides at the double and thribble board. Triple guying in four directions steadied the 176-foot derrick against the high winter winds. Note the double stand pipe arrangement. One stand pipe is shown equipped with a steel rotary hose while the other with rubber hose. Either system could be placed into service with little difficulty.

Nearest oil production to Weller 51-11 is in the small Binger field, about 12 miles northeast. Caddo County has two good producing fields, the Cement field, which is about 20 miles southeast of the Superior wildcat, and the Apache pool, about the same distance to the south. Both of these fields produce from comparatively shallow depths, however.

Weller 51-11 was in the south-central area of the Oklahoma portion of the Anadorko basin, and believed to be over a definite structure. Sedimentary rocks of the basin consist chiefly of marine Paleozoic formations from the Cambrian, to and including the Permian. Thin representatives of the Mesozoic and Cenozoic, Tertiary and Recent cover much of the area. Average thickness of the sedimentary column has been estimated at approximately two miles. Thickest section of the region occurs at the bottom of the basin, where more than three miles of sediments exist.

Structurally, the region is a broad syncline, with the deepest section situated along the south side adjacent to the Amarillo-Wichita belt of folding. Rocks dip steeply north from this area of folding, then rise from the bottom of the syncline gradually north and west to the boundaries in southeastern Colorado and southwestern Kansas. It probably will be the site for many deep tests and possible new well depth records of the future.

Problems In

WORLD'S DEEPEST FISHING JOB

By FRANK BRIGGS

Houston Oil Field Material Company

RESULTS WHICH follow exceeding the structural limitations of oilwell equipment are given in this interesting sidelight on the deepest fishing job. Despite these handicaps, the fish was surfaced, and the well again freed for the drilling program. The article describes equipment and methods which enabled the fish to be cut at depths more than three miles below the derrick floor.

CUTTING and fishing 3½-inch drill pipe from an unprecedented depth in the world's deepest well drew heavily on the skill and experience of the several companies specializing on this work. Both inside and outside cuts were made successfully at depths which establish new world's records. After more than a month's work, 16,970 feet of drill pipe was recovered, fulfilling that phase of the fishing operation assigned the fishing specialists. All that remained in the Weller 51-11, Caddo County, Oklahoma, was approximately 256 feet of drill collars and drill pipe which The Superior Oil Company of California successfully recovered.

Trouble at 17,226

The fishing job resulted when the drill stem became stuck at about 17,226 feet after being lifted about ten feet off bottom. The fish consisted of 3½-inch, 15.50 pound, Grade E drill pipe and seven 4½-inch outside diameter drill collars. A world's record string of seven-inch O. D. casing had been set to 16,351 feet, leaving 885 feet of 5¾-inch open hole to bottom at 17,236 feet.

The first operation in clearing the hole involved the use of an inside cutter. A 3½-inch internal flush drill pipe cutter was run on 1.66-inch O. D. drill pipe with 1-13/16-inch O. D. tool joints. The first cut was attempted at 16,966 feet, but was unsuccessful because of failure of the small pipe. The failure was due to a combination of excessive loading (its own weight) and the applied torque.

The 1.66-inch O. D. drill pipe has an inside diameter of 1.086-inches, which at the threaded section adjacent to the tool joint provides a minimum cross-sectional area of 1.18 square inches. The yield strength for this pipe, Grade D or the comparable J55, is 55,000 pounds per square inch. This provides a total yield strength of approximately 65,000 pounds at the weakest section. The weight of 17,000 feet of this small pipe exceeds 68,000 pounds, which in itself is 3000 pounds in excess of the specified yield strength. The question in using this as operating pipe was one of balancing the strength against the working dimensions and the availability. In this case it was decided to take a chance on the ultimate strength of the steel being sufficient to permit its successful use as a medium for running the inside cutting tool. However, the application of torque to the string further burdened the loading capacity, and it was this overload and torque which resulted in a twistoff during the initial cutting operation.

Fishing for and retrieving the operating pipe required the use of a special non-releasing spring-slip type overshot. This tool permitted the fish to pass inside the slip which closed thereon with an upward motion of the operating pipe.

Second Cut Attempted

The second inside cutting attempt was made with the same equipment as outlined above. The cutting tool was spotted at 16,934 feet this time and cut almost completely through the drill pipe at this depth. (The success of this operation was not known until later developments showed the pipe to be cut at this point.) After the fishing tool operator had been satisfied that the cut had been made, the tool was started on a withdrawal from the pipe. However, after only a few stands had been withdrawn, the becket on the lift adapter sheared and again the small pipe and tool were lost inside the 3½-inch drill pipe. The severe shock caused by these two failures greatly weakened the small pipe and tool joints, causing more failures during subsequent fishing and retrieving operations. The down-time necessitated by this procedure was sufficient to permit the mud to set up around the fish and prevent the withdrawal of the pipe above the cut.

At this point, it was decided to lighten the operating string by replacing the lower 10,000 feet with 1¼-inch upset tubing. It was also decided to run another type of inside cutting tool. This tool, with 10,000 feet of 1¼-inch upset tubing on bottom and the remainder of 1.66-inch O. D. drill pipe on top, were spotted at approximately 16,410 feet. The cut at this point was successful and this amount of 3½-inch internal flush drill pipe was subsequently removed from the hole.

Inside Cutting Tool

The inside cutting tool is composed of a body wherein tool steel knives are pinned. The cutting points of these knives are expanded by means of wedge arms. The force required to expand the knives is obtained from the weight of the drill pipe above. This weight is resisted by slips set within a slidable sleeve on the tool. These slips expand on a taper and bite into the walls of the pipe to be cut. The mechanism is brought into operation by rotation; rotation also completes the cut. An upward movement releases the tool.

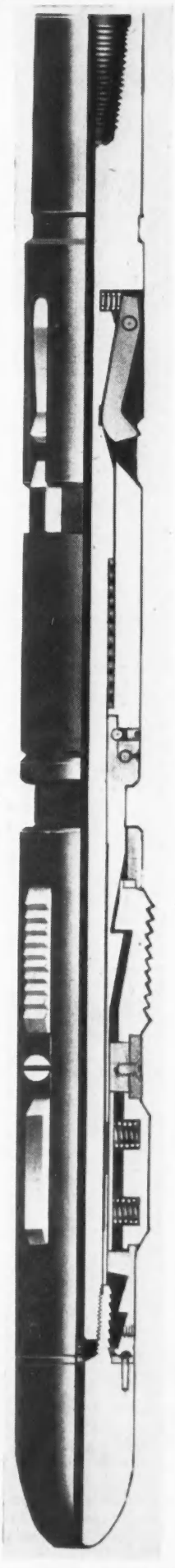
In this deep cutting and fishing operation, the power for rotation was supplied by the power swivel, a comparatively recent tool. This is a hydraulic device comprising a gasoline prime mover driving a hydraulic pump. The hydraulic pressure created by this pump drives a fluid motor which in turn provides the motive power for rotating the

swivel. The particular unit in use develops approximately 1000 foot-pounds of torque and rotates at a speed of 17 revolutions per minute.

After the removal of drill pipe resulting from the first inside cut, the following operations involved washing over and cutting with specially constructed tools. These special tools were necessitated by the close dimensions in which they must work. Remembering that seven-inch casing had been set to 16,351 feet, washing over could be accomplished only with 5½-inch wash pipe. By placing the washover shoe on the bottom of this size wash pipe, an open hole bore of 5¾-inches was made during this operation. This meant that the outside cutting tool must work over the 4½-inch outside diameter of the tool joints and inside the 5¾-inch bore of the hole. Thus, a tool providing 1/8-inch clearance of both diameters was constructed, having a 5 5/8-inch outside diameter and a 4 5/8-inch inside diameter. This provided a ½-inch wall section in which were incorporated the mechanisms of the tool.

Outside Cutting Tools

Two types of outside cutters were used on this job: One company's design used a "flipper dog" assembly and a pre-loaded spring arrangement. The purpose of the flipper dog overshot was to provide a means for shearing pins which would bring the compressed spring into action, forcing the knives into the fish. This shearing action was obtained by pulling up under the topmost tool joint adjacent to the cutting depth. The first and third outside cuts were made with this type of tool. The second outside cut was successfully completed with the type tool shown in Figure 2. This tool provided a slip and bowl arrangement which permitted the upward passage of



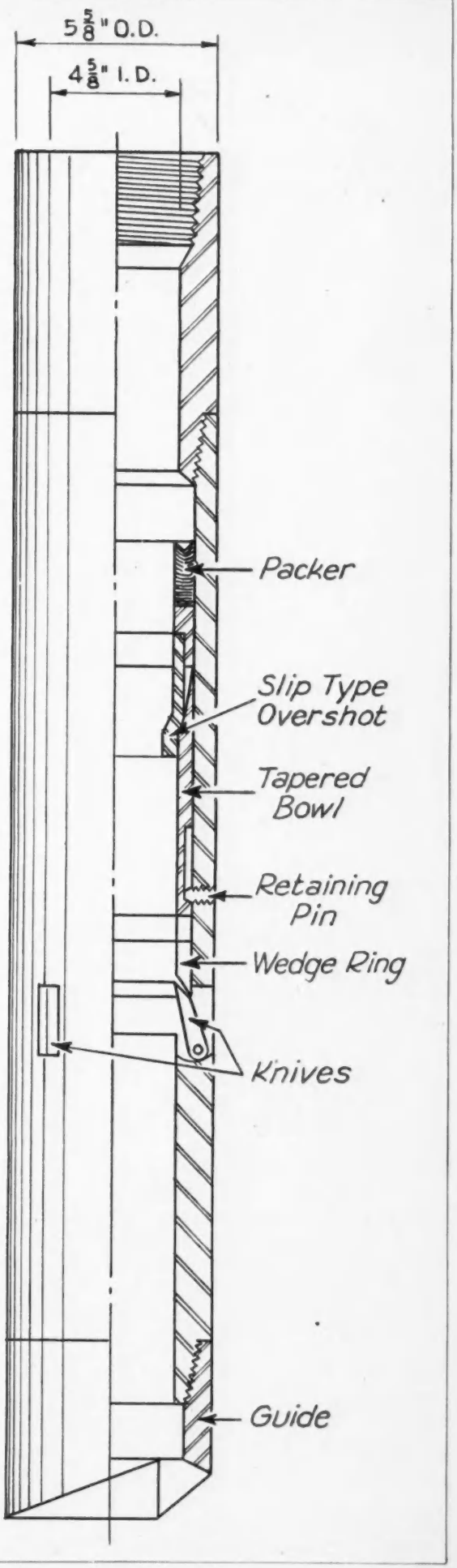
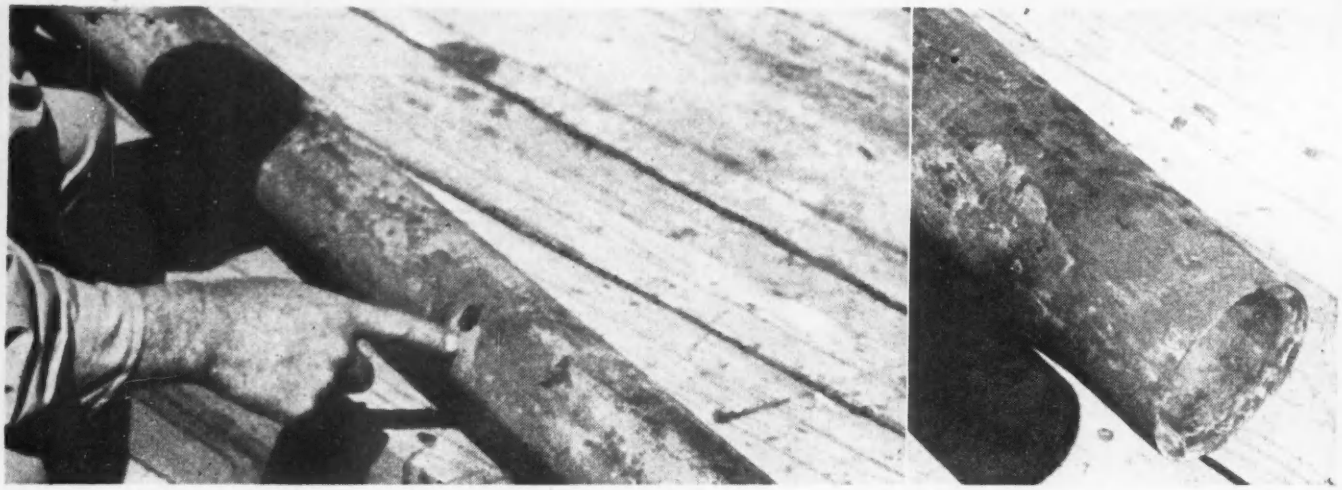


Figure 1 (left): One of the types of inside cutters used in recovering the drill pipe. This tool is actuated by rotation. The friction blocks resist the rotation that permits unscrewing the bottom or nose piece, which in turn permits the slips to expand on the inner tapered mandrel and set themselves on the walls of the fish. Additional weight from above forces the wedge arms under the cutting knives and continued rotation severs the pipe. An upward motion releases the tool.

Figure 2 (right): One type of outside cutter used on the job is illustrated here. This tool is brought into action by catching under the topmost tool joint of the fish with the slip-type overshot. By pulling up slightly, pins are sheared which permit the wedge ring to slide behind the three cutting knives, forcing them into the fish. Rotation then severs the pipe. This special tool was provided with a packer which would utilize hydraulic pressure to force the wedge ring behind the knives in lieu of the upward strain taken while anchored under a tool joint.



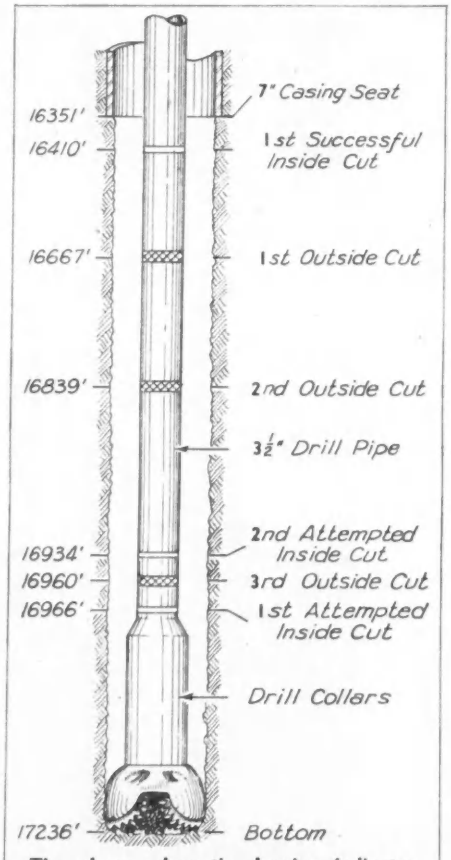
Top of the first successful inside cut is shown at right. This cut is smooth and beveled. The hole in the pipe is the result of a bullet perforation to permit circulation between the inside and outside of the stuck fish.

the joints through the tool. However, an upward movement of the operating string would cause the slips to catch under the tool joints. There also was provided a means of trapping the pump pressure and utilizing this to expand the knives. In other words, this tool was provided with a means for cutting with an upward force under the tool joints or, by utilizing hydraulic pressure, to cut anywhere in the joint of the pipe. During actual cutting operations, a restriction in the jars (one-inch I. D.), which were run just above the wash pipe, would not permit sufficient flow to force this member to function. Cutting was therefore brought about by allowing the slips to set under the tool joints.

After washing over the remaining fish from the first inside cut, the "flipper dog" type outside cutter was run below approximately 315 feet of 5½-inch wash pipe. Above this was a safety joint and jars connecting the wash pipe to the 3½-inch drill pipe used as the operating string. After reaching the desired location with the cutters the pipe was successfully parted at 16,667 feet. After retrieving this section of fish, washing over and mud conditioning operations were continued until the running of the second type of outside cutting tool as shown in Figure 2. The second cut was made with the above described tool at a depth of 16,839 feet and recovered 172 feet of fish. The third cut was made at 16,960 feet, which was just above the seven 4½-inch O. D. drill collars.

After the recovery of this last 121-foot section of fish, the evidence of the original inside cut was found. When laying the last joint down, handling caused this joint to break in the groove made by the incompleted work of the original inside cutter. During cutting operations, the only indication that a successful cut had been made was the torque meter; the torque while cutting averaged 45 to 55 units and dropped to approximately 35 after the cut had been made. The cutting speed averaged approximately 30 revolutions per minute. In all cases the cutting time was in the neighborhood of five hours and the knives in both tools were fractured upon completion of their work.

During all washing over and cutting operations a jarring tool was run in the string as a safety feature. Because of the close tolerances and the type formations, these jars were available should the lower members become stuck.



The above schematic drawing indicates the location of all attempted and successful cuts. The first severance of the drill pipe was made with the inside cutting tool; the first successful cut recovered 16,410 feet. The subsequent cuts were made with the outside tool and recovered sections of drill pipe ranging in length from 257 feet to 121 feet.

The success of this hazardous cutting and fishing job was the result of the combined efforts and thoughts of Superior's personnel and the men and tools provided by several manufacturers and service companies.

Petroleum Division Meeting Begins in Houston October 5

Sessions of the annual Petroleum Mechanical Engineering Conference, ASME, will be held at the Rice Hotel, Houston, October 6-8. Registration will begin October 5.

Papers on mechanical engineering problems in all phases of the petroleum industry will be presented by outstanding mechanical engineers representing a broad cross-section of the industry on a national scale.

Field trips to inspect the vast petrochemical industry located around Houston are part of the program.

Carl E. Reistle, Jr., general manager for production operations of Humble Oil & Refining Company, will be chairman of the conference.

Although the ASME is sponsoring the meeting, AIME and API members are invited and many are participating, according to Reistle.

Veteran mechanical engineers were urged to attend by Reistle, who asked them to interest themselves particularly in getting their young associates to participate.

"It will help them to catch up rapidly their losses due to the blackout of technical conferences during the war."

Producers Issue Pamphlet On Work and Organization

A pamphlet published by the Texas Independent Producers and Royalty Owners Association, entitled "Organized for Your Welfare," outlines the work of the organization and emphasizes that "independent producers and royalty owners of Texas must band together to protect their common interests." Texas Independent Producers and Royalty Owners Association was organized at Austin, April 18, 1946, with an original membership of 37. Seventeen months later, August 26, 1947, the membership was 2197.

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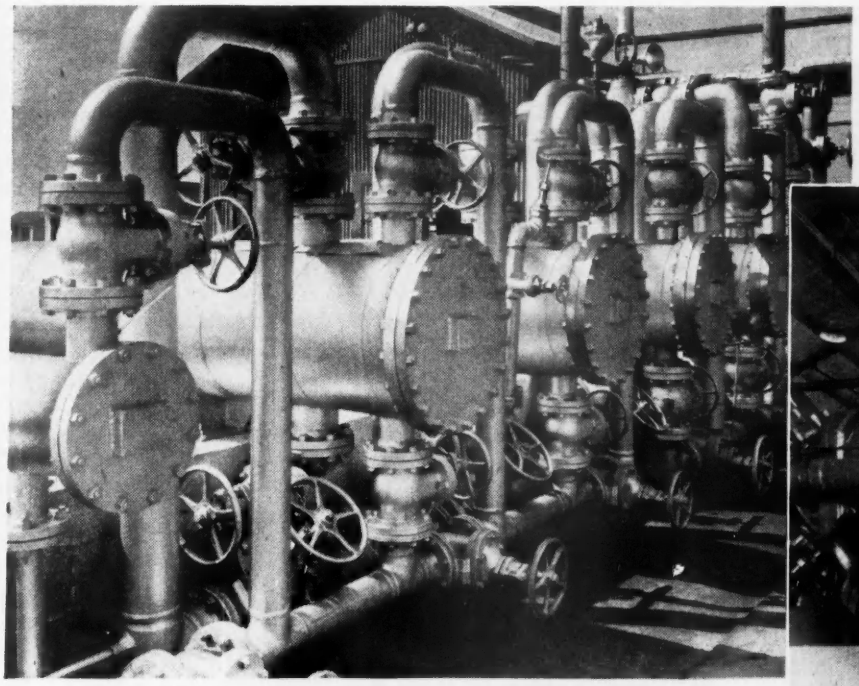

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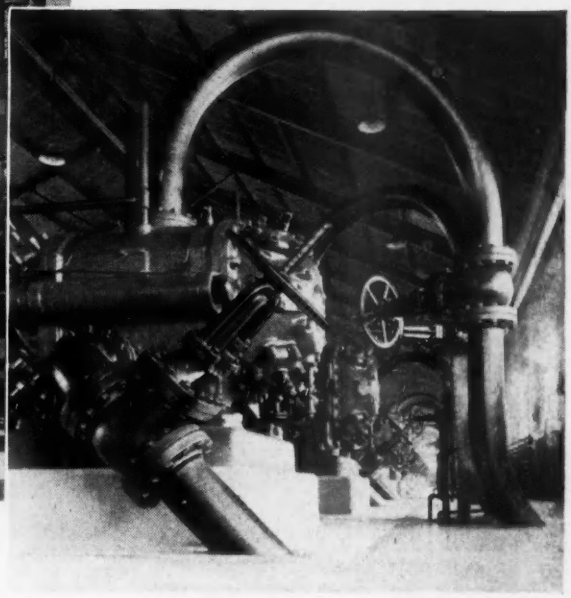

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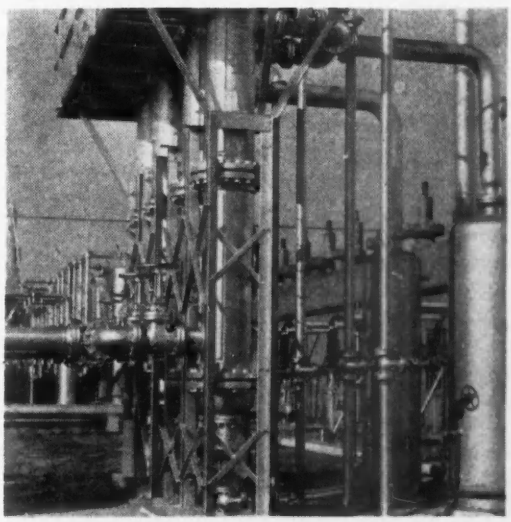

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Condensate PRODUCTION AND CYCLING

Part 5

By PARK J. JONES
Consultant

Condensate Recovery for Several Intervals

CONDENSATE recovery is expressed in terms of invadable acre-feet, breakthrough recovery and composition of production for a cycling economic limit. This article is limited to one well completed in several intervals. In Part 6, the procedure will be extended to reservoirs having several wells and pay intervals.

Recovery From a Section

The rich gas displaced from a section of pay just invaded by dry gas is[1] on the order 74 percent of the in-place rich gas. This is called the breakthrough recovery for a section. The position of a breakthrough section varies with the distance advanced by injected gas and is denoted by B, the breakthrough contour.

The maximum rich gas recovery from a section of pay by displacement and diffusion combined is[1] on the order 98 percent of the in-place rich gas. The position of a maximum recovery section is denoted by M, the maximum recovery contour. The position of the M contour varies with the position of the B contour and with convergence of the rich gas reserve between the B and M contours.

Convergence of reserve is[1] defined by

$$C = \frac{B - M}{500} \qquad (1)$$

where B and M are the average distances from a gas injection well to the B and M contours.

The Displacement Factor

Let m_b equal the displacement factor for a B-M region, that is, the rich gas displaced from the acre-feet of pay within a B-M region. It has been shown[1] that

$$m_b = 1/6\,[U_o(C+2)+U_b(4-C)] \qquad (2)$$

where U_b and U_o are the breakthrough and maximum recoveries from a section and C is convergence. Upon substituting 74 for U_b and 98 for U_o, we have

$$m_b = 82 + 4C \qquad (3)$$

Equation (3) defines the displacement factor for a B-M region in terms of the convergence of reserve within the B-M region. The limiting values of C are zero and two. The limiting recoveries from a fully developed B-M region are 82 and 90 percent of the in-place gas.

For radial advancement of a B contour and no variation of pay thickness, the position of an M contour is[1] defined approximately by

$$M = (250{,}000 + B^2)^{1/2} - 500 \qquad (4)$$

For instance, when B advances 100 feet from an injection well, the position of the M contour is approximately ten feet from the well. The corresponding convergence is (100—10)/500 or 0.18. The recovery from the acre-feet of pay between the 10- and 100-foot circles is [82 + 4(0.18)] or about 83 percent of the in-place rich gas. The recovery from the acre-feet of pay within the 10-foot circle is 98 percent of the in-place rich gas.

When a B contour averages 4000 feet from an injection well, the position of the M contour is about 3500 feet. The corresponding convergence is almost unity. So the recovery from the acre-feet of pay between the 3500 and 4000-foot circles is about 86 percent of the in-place rich gas. The recovery from the acre-feet of pay within the 3500-foot circle is about 98 percent of the rich gas in place. The total breakthrough recovery is some value between 86 and 98 percent of in-place rich gas, depending on the acre-feet of pay within the B-M and M regions.

As displacement of rich gas by injected dry gas is predominantly radial, the assumption that the displacement is strictly radial does not introduce significant errors. It has been shown[1] that the breakthrough displacement factor m for the B-M and M regions combined is defined by

$$m = 82 + 8A \qquad (5)$$

where

$$A = \frac{M}{B} + \left(\frac{M}{B}\right)^2 \qquad (6)$$

Figure 5-1 is a solution of the foregoing equations. Recovery from the acre-feet invaded by dry gas is plotted against the average distance advanced by dry gas. Recovery is in percent of in-place rich gas. Recovery also is in percent of in-place liquid content aside from condensation in reservoirs. The average distance advanced by dry gas is given by

$$B = 117.8(a)^{1/2} \qquad (7)$$

where (a) is the acres of pay invaded by dry gas. The data in Figure 5-1 give breakthrough recoveries. With injection of sufficient gas, the ultimate recovery from invaded acre-feet of pay may reach 98 percent of in place rich gas by virtue of displacement and diffusion.

Example 1

The breakthrough area is 600 acres. Estimate the displacement factor for three pay intervals having permeability ratios 0.25, 0.50 and 1.0. Solution:

Permeability ratio...	0.25	0.50	1.0
Acres invaded by dry gas	150	300	600
Average distance, B, feet	1440	2040	2885
Displacement factor, percent	91.9	93.2	94.5

Suppose the per-interval pay thickness were uniform. The cumulative recovery C at breakthrough would be as follows:

$$C = [0.25(0.919) + 0.5(0.932) + 0.945]/3 = 0.528$$

or 52.8 percent of the rich gas within the 600 acres or 52.8 of the liquid in place within the 600 acres aside from condensation. Additional recovery would be contaminated by dry gas. After breakthrough, the BPMM in production decreases because of dry gas in production.

BPMM After Breakthrough

Consider a breakthrough interval. Denote by unity the acre-feet of pay that can be invaded ultimately. Let b equal the fractional acre-feet invaded at breakthrough. The cumulative liquid recovery at breakthrough is bm where

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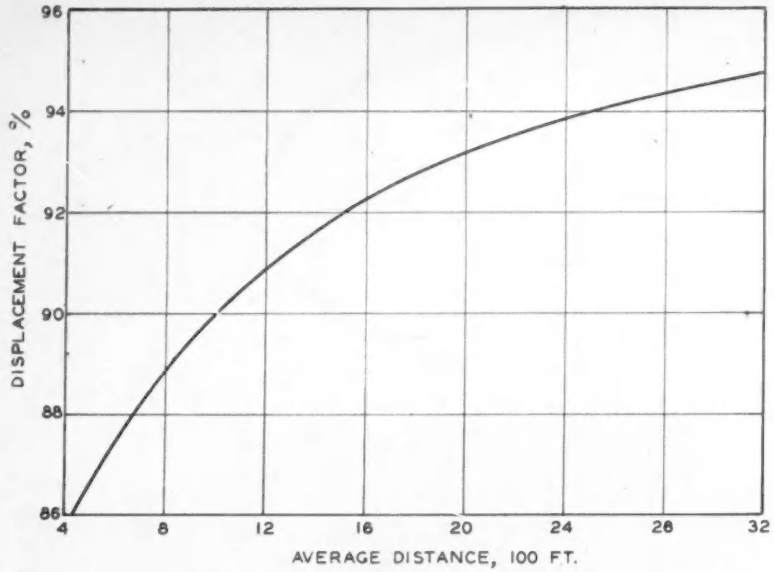

Figure 5-1. The breakthrough displacement factor in percent of in place rich gas vs. the average distance advanced by dry gas from an injection well.

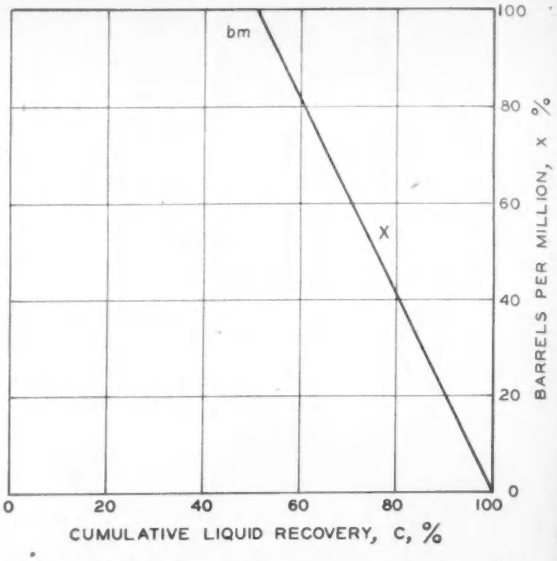

Figure 5-2. BPMM for a breakthrough interval vs. cumulative liquid recovery C in percent of the initially in place liquids; bm is the breakthrough liquid recovery.

m is the breakthrough displacement factor.

Denote the barrels per million in a rich gas by unity aside from condensation in reservoirs and contamination by dry gas. The composition or BPMM in production after breakthrough is not likely to be more than proportional to the liquid remaining in place within the unit acre-feet. Let X equal the relative composition. Then X is equal to unity until dry gas appears in production. After breakthrough, the BPMM is not likely to exceed the composition defined by

$$X = \frac{1 - C}{1 - bm} \qquad (8)$$

where $(1 - bm)$ is the relative liquid in place at breakthrough and $(1 - C)$ is the relative liquid in place at any time after breakthrough, see Figure 5-2.

Now, the increase in cumulative liquid recovery dC divided by the increase in the volume of gas produced dV is equal to X the composition of production. Thus,

$$\frac{dC}{dV} = X = \frac{1 - C}{1 - bm}$$

from which

$$V = -(1 - bm)\int \frac{-dC}{1 - C} = -$$

$$(1 - bm)\log(1 - C) + K$$

where K is some constant. But, at breakthrough, the relative liquid recovery, and also the relative volume of gas produced, is equal to bm. Accordingly,

$$K = bm + (1 - bm)\log(1 - bm)$$

and

$$V = bm + (1 - bm)\log\frac{1 - bm}{1 - C} \qquad (9)$$

To obtain cumulative liquid recovery C in terms of cumulative gas production, solve equation (9) for C. Thus,

$$C = 1 - (1 - bm)e^{-(V - bm)/(1 - bm)} \qquad (10)$$

The C curves in Figure 5-3 are solutions of equation (10) for breakthrough acre-feet equal to 40 and 80 percent of the unit acre-feet. The breakthrough displacement factor here used is 92 percent of in-place rich gas, see Figure 5-1. The data are for one producing interval only.

To obtain the relative composition of production X after breakthrough of dry gas in terms of cumulative gas production, eliminate cumulative liquid recovery between equations (8) and (10). Thus,

$$X = e^{-(V - bm)/(1 - bm)} \qquad (11)$$

The X curves in Figure 5-3 are solutions of equation (11) for breakthrough acre-feet equal to 40 and 80 percent. Composition starts declining in this example when cumulative gas and liquid recoveries are either 36.8 or 73.6 percent of the in place values within the unit acre-feet. The latter may, or may not, be 100 percent of the total acre-feet within the interval here under consideration. The data do not apply if production is from two, or more, pay intervals having variable permeability.

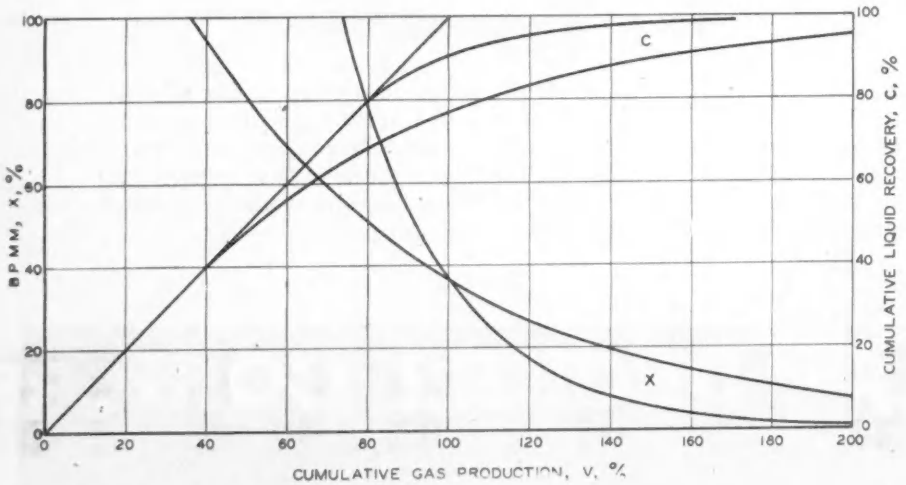

Figure 5-3. Cumulative liquid recovery C and BPMM in production X vs. cumulative gas production V from a breakthrough interval.

The Economic Limit

The economic limit in cycling operations varies with the rate of gas production and with the BPMM at dew-point pressure. For a producing rate on the order of 200, or more, million cubic feet per day and a dew-point composition of 100 BPMM, the economic limit could be 10 BPMM, that is, 90 percent dry gas in production. On the other hand, a 20 million cubic feet per day producing rate and 40 BPMM dew-point composition may have a 20 BPMM economic limit, that is, 50 percent dry gas in production.

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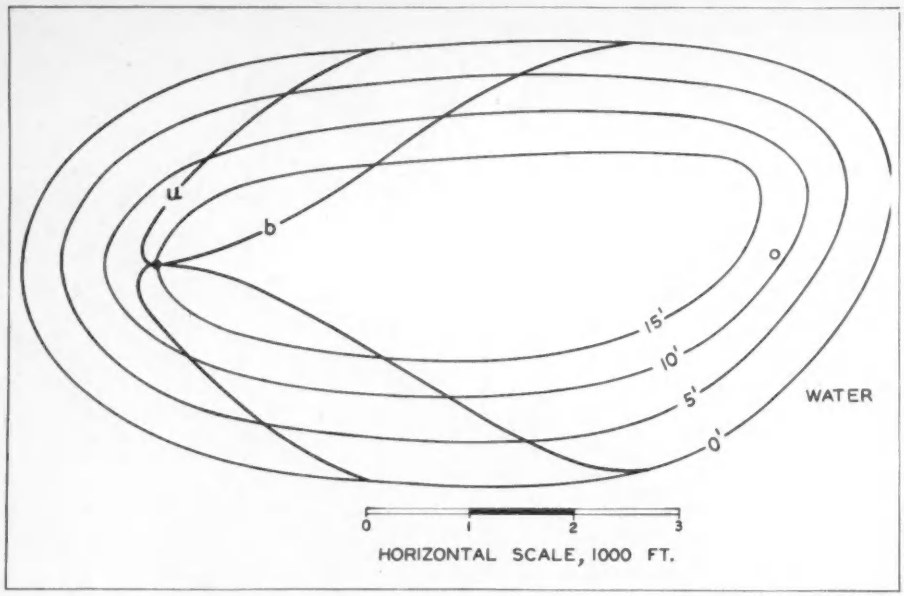

Figure 5-4. The acre-feet of pay invaded at breakthrough, b, and ultimately, u, aside from economic limits for a reservoir having one pay interval.

limited to one interval. The cumulative liquid and gas recovery at 10 and 50 percent economic limits for the data in Figure 5-3 would be as follows:

Breakthrough acre-feet, percent	40		80	
Breakthrough recovery at 0.92 percent	36.8		73.6	
Economic limit, percent	10	50	10	50
Cumulative liquid recovery, percent...	93	68	96	87
Cumulative gas produced, percent	180	80	134	92

Economic limits are in percent of the dew-point BPMM. Cumulative liquid recovery and gas produced is in percent of the initially in-place liquid and gas within the acre-feet that can be invaded ultimately by dry gas. The invadable acre-feet may be less than the total acre-feet. In such cases, multiply C and V by the fractional acre-feet of pay that can be invaded to obtain cumulative liquid recovery and produced gas in terms of the in-place fluids.

One-Pay Interval

The b curve in Figure 5-4 shows the acre-feet of pay invaded at breakthrough in a reservoir having one pay interval. The u curve shows the acre-feet of pay that could be invaded ultimately aside from economic limits. The acre-feet of pay to the right of the u curve is 80 percent of the acre-feet in the reservoir. The acre-feet of pay to the right of the b curve is 75.6 percent of the acre-feet on the right side of the u curve.

Denote the acre-feet to the right of the u curve by unity. Then $b = 0.756$. The invaded area for b is 387 acres. So the average distance advanced by dry gas is about 2317 feet. From Figure 5-1, the corresponding displacement factor is 93 percent of in-place rich gas. The breakthrough gas and liquid recovery is 93(0.756) or 70 percent of the fluids initially in place within the unit acre-feet. The composition of the production after breakthrough is defined by

$$X = e^{-(V-0.7)/0.2}$$

and the cumulative liquid recovery, by

$$C = 1 - 0.3X$$

The solid curves in Figure 5-5 are solutions of the foregoing expressions. The data are in terms of the acre-feet of pay on the right side of the u curve in Figure 5-4. The dashed curves show cumulative liquid recovery and composition in terms of the entire reservoir. The dashed curves are at 0.8 of the solid curves.

Let the economic limit be either 10 or 50 percent of the dew-point composition. In terms of the entire reservoir, we have the following values all expressed in percent:

Breakthrough acre-feet	60.5	
Breakthrough displacement factor	93.0	
Breakthrough recovery	56.4	
Economic limit	10	50
Liquid recovery	77.5	68.0
Produced gas	112	73

Because of economic limits as to dry gas in production, the invaded acre-feet of pay at abandonment of cycling operations in the present example is either 68.0 or 77.5 percent of the acre-feet in the reservoir divided by the displacement factor at abandonment of cycling operations.

To obtain the approximate displacement factor at economic limit, multiply $(98 - m)$ by $(1 - E)$ where m is the breakthrough displacement factor and E is the relative composition at economic limit. In the foregoing example m is 93 and E is either 0.1 or 0.5. Accordingly, $[5(0.9) + 93]$ or 97.5 or $[5(0.5) + 93]$ or 95.5 are the estimated displacement factors at the 10 and 50 percent economic limits respectively. The acre-feet invaded at economic limit is here 77.5/0.975 or 79.5 percent of the reservoir acre-feet for the 10 percent economic limit and 68/0.955 or 71.2 percent for the 50 percent economic limit.

The number of years required to cycle a reservoir down to an economic limit varies with the rate of gas phase production, the composition of production and the economic limit. A 10 percent annual rate of gas phase production would require 11.2 or 7.3 years of cycling for the 10 or 50 percent economic limits in the foregoing example.

Reference

[1] Jones, Park J., Vol. II, Optimum Rate of Production Reinhold Publishing Corporation, New York, 1946.

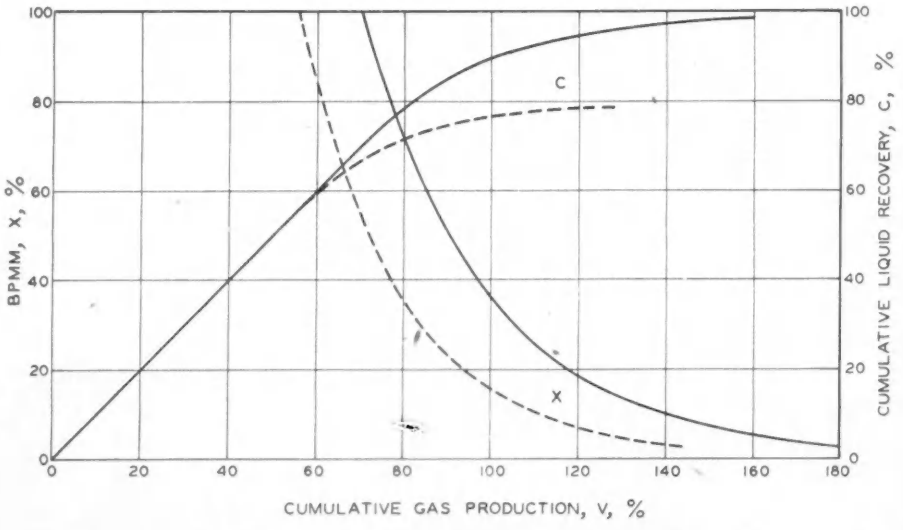

Figure 5-5. Cumulative liquid recovery and composition of production vs. cumulative gas production from the reservoir in Figure 5-4. Dashed curves are relative to the entire reservoir; solid curves are relative to 80 percent of the reservoir.

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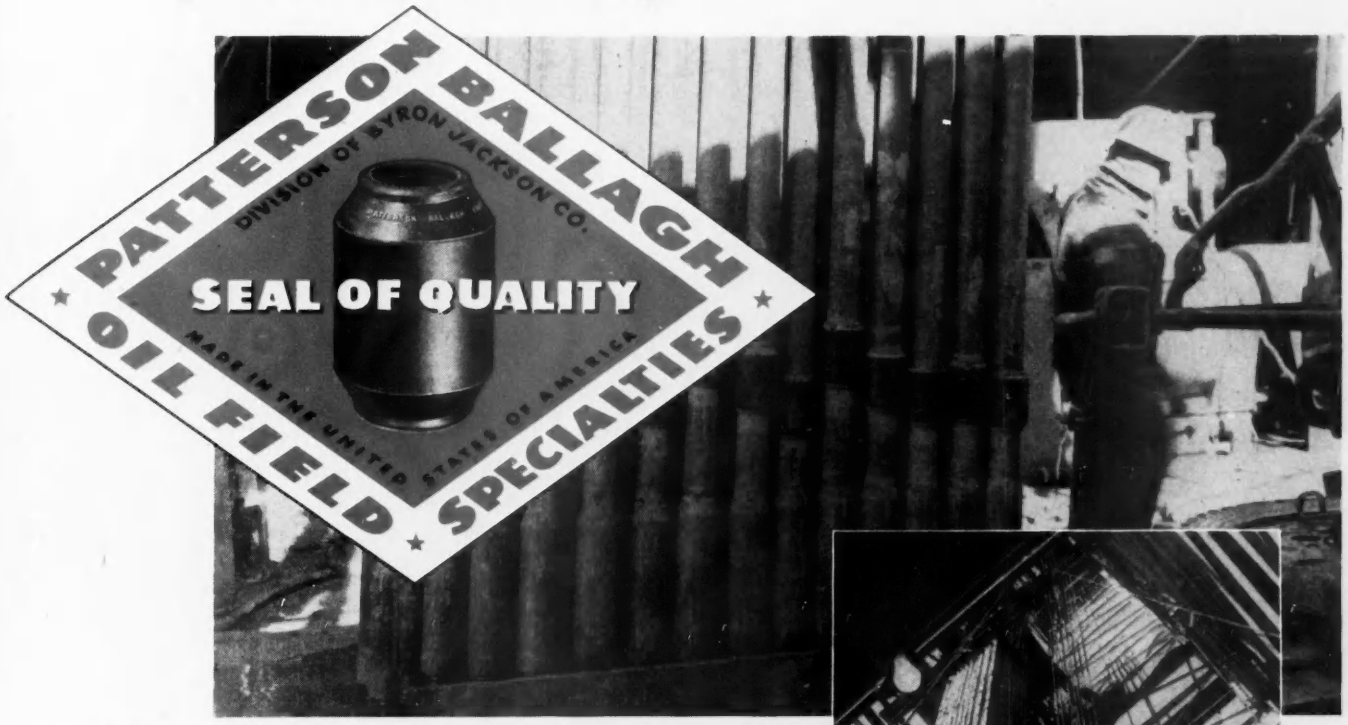
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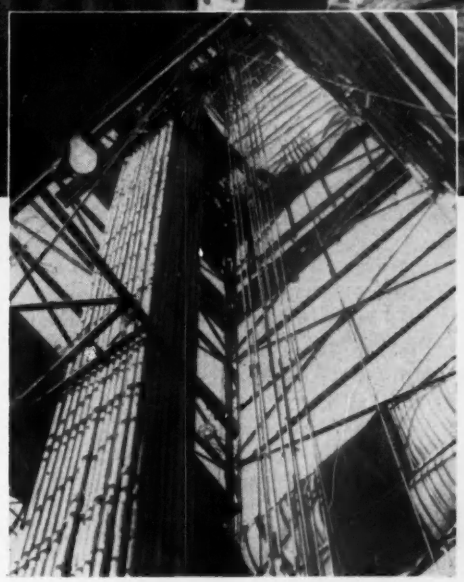

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STEEL OUTLOOK
Is Favorable

MUCH of the oil industry's current difficulty in meeting the heavy demand for petroleum products is due to shortages of steel goods, needed to expand production, transportation, and refining facilities. Consequently, the matter of U. S. steel industry capacity for making oil industry steel goods is one of particular interest to oil companies.

Is the shortage of casing, tubing, and other steel products only a temporary situation, or is it likely to continue causing trouble for the oil industry? For the long term, in which the petroleum industry certainly will have to carry out a large-scale modernization and expansion program, will the suppliers of the necessary steel goods have enough plant capacity to meet these needs? Or will they have to first carry out a great deal of plant expansion of their own?

In seeking the answers to these and related questions, WORLD OIL sought the views of E. L. Shaner, editor-in-chief of *Steel* magazine, who gave considerable attention to the subject and furnished a great deal of pertinent information. That magazine was well informed on the contemplated expansion program of the petroleum industry and had published several articles calling this program to the attention of the steel industry. Editor Shaner offered information which pointed to the general conclusion that the shortages of steel products for the petroleum industry ultimately will be relieved after the present critical scarcity has caused heavy production for an extended period.

"After watching the ups and downs of the steel industry for more than 30 years, I cannot bring myself to believe that hard-boiled steel producers will neglect any market in normal times," stated Shaner. "Once the present crisis is over, they will be out fighting for business as eagerly as ever. In the process they will build up capacity in excess of demand, just as they always have done in the past."

Even at present there are some definite plans for important plant expansion among steel and steel products manufacturing companies, in spite of statements which have been made by some steel men, suggesting that no material expansion will be needed—that present facilities will be adequate when the present temporary shortage is over.

"Historically," said Shaner, "the steel industry always has managed to provide capacity in excess of normal demand, and there is every reason to believe that it will continue to do so."

In so far as the petroleum industry is concerned, it is not necessarily reassured by steel producers who contend that demand for steel is abnormal at present and due to ease off later. For while this may be true of the demand for steel generally, it may not be true of the demand for a single specific kind of steel. It is necessary to differentiate between (1) the problem of supplying enough blast furnace, coke oven and steelmaking capacity to provide sufficient raw steel in ingot form to meet demand; and (2) the problem of supplying enough mill and finishing capacity to provide the desired tonnage of sheets, plates, bars, tubes, etc.

Ingot Production

Most of the statements that have been made regarding steel capacity have had to do with ingot capacity. At present it is slightly above 91 million net tons annually. This compares with capacities of 71 million in 1929, 80 million in 1938, 81.8 million in 1939, and 95 million in 1945 when the war ended.

Production in 1929 was 88.5 percent of capacity, in 1938, 39.6 percent of capacity, in 1939, 64.5 percent, and in 1945, 83.5 percent. Thus far in 1947 production has been running well over 90 percent of capacity.

Many attempts have been made, within and outside the steel industry, to estimate how much steel ingot capacity will be required to serve customers adequately in the next decade or two. The industry almost always is in the process of expanding capacity. For instance, during the 1930's, ingot capacity was increased by 10 million tons, and this in spite of the most serious depression ever experienced and in spite of the fact that in 1932 the industry operated at only 19.5 percent of capacity.

With this history in mind, steelmakers probably are dubious about accepting some of the estimates that come out of Washington as to tonnage of new capacity that should be added as soon as possible. On the other hand, they are equally sensitive to the criticism that would be heaped upon them if they failed to increase capacity sufficiently to satisfy the normal long-term future market. Therefore, they probably will wind up with an expansion that falls short of what Washington theorists are demanding but one that exceeds the estimates of the more conservative spokesmen of the industry.

A sidelight on expected demand is afforded by the recent report of the Twentieth Century entitled "America's Needs and Resources." This report goes into population trends, standard of living, buying habits of families, and other factors bearing upon the ability of the people to buy manufactured products. On the basis of these data, the report estimates that 93.8 million net tons of steel will be needed annually by 1950, and 103.8 million tons annually by 1960.

It would not be difficult to increase steelmaking capacity to meet these requirements. In fact, the increase required for the decade from 1950 to 1960 figures out at less percentagewise than the actual expansion of capacity in the depression-ridden decade of the 1930's. These figures, while purely speculative, do indicate that fairly optimistic estimates of future demand can be met by increases in capacity that are fully compatible with past experience in the steel industry.

There is another factor that may have an important bearing upon steelmaking capacity in the near future, it was pointed out by the editor of *Steel*. It is the use of oxygen in open-hearth furnaces. Current experience indicates that when oxygen can be supplied at a relatively low cost, its use in enriching the air introduced into an open hearth may increase the output of the unit by 50 percent. In other words, oxygen enrich-

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ment gives promise of making a 12-furnace steelworks the equivalent of an 18-furnace layout. This will be one of the most important developments in the history of the steel industry. While it will involve drastic changes in plant layout and a complete revamping of material handling equipment, it eventually will be an important factor in the nation's ability to produce steel.

Considering all factors, it is strongly indicated that after the steel industry has caught up on the present wartime accumulated backlog of demand, it will have sufficient steel ingot capacity for future needs.

The oil industry is interested, however, as stated before, not only in the steel ingot capacity but also in the question of rolling mill and finishing capacity for individual steel products, such as oil country tubular goods, containers, plates, etc.

The demand for plates can be met easily, stated Editor Shaner, as soon as the supply of steel ingots is sufficient. Plate mill capacity, expanded tremendously because of the shipbuilding program of the war, will far exceed any conceivable peacetime demand for years to come. Major pipe line projects call for a large tonnage of plates plus an economical setup for fabricating them into pipe. This fabrication can be done at the plate mill or at a fabricating shop such as the one recently established by Consolidated Steel in Los Angeles to fabricate the pipe for one of the Arabian pipe lines. Plates for tank car building, for tank farms, and for other oil industry needs should be available in ample tonnage once the present crisis is past.

Containers A Problem

Containers may be a problem for some months because light flat roll steel products are the tightest of all rolled steel products. However, of 56 rolling mills in process of construction last March, 36 were sheet or strip mills and a majority of these were scheduled for completion before the end of 1947.

The outlook for adequate capacity for tubular products, which are particularly important to the oil industry, probably is better than appears at first glance. Apparently, some of the concern among oil people as to the long-term supply of steel is based on the view of some tubular goods manufacturers, who question whether sustained demand over a long postwar period will justify an increase in capacity for tubular goods. One such manufacturer's spokesman declared that the steel industry on a normal basis, with equipment in good shape, unhampered by strikes and shortages, could produce about 5⅛ million tons a year, with a good peacetime mix, which would be 48 percent over the 1937-1940 average. Ror the entire year of 1946 production in relation to capacity for tubular products was as follows: butt weld, 62.9 percent; lap weld, 39.3 percent; electric weld, 51.2 percent; seamless, 70.1 percent. A study of percentage of production to capacity over the years for several decades shows conclusively that there is an adequate finishing capacity for tubular products.

However, mere physical capacity to produce a product is not a reliable index. In these days of high costs, capacity to produce economically is the thing that counts. This accounts for references to the high costs of new construction vs. the low profit position of pipe and tubing. It is an unfortunate fact that all capacity is not of equal efficiency. Producers of tubular products, as well as producers of all other steel products, face the serious problem of rehabilitating their plants to offset the lack of maintenance and improvement during the war years. They have appropriated millions of dollars for this purpose, but their programs have been set back by high costs and by inability to get prompt delivery on certain key equipment.

Patent Roundup

Patents issued by the United States Patent Office, Washington, D. C., include those listed below.

Printed copies of the patents listed are furnished by the Patent Office for 25 cents per copy and can be had by addressing the Commissioner of Patents, Washington 25, D. C.

Recovery of Oil

An apparatus for treating depleted oil sands and increasing the oil flow (No. 2,421,528) has been patented by Ralph M. Steffen, North Hollywood, Calif.

In a well extending into the oil sand is a pumping conduit. A second adjacent conduit contacts the pumping conduit, extends into the oil sand of the well, and has vertically spaced apertures below the top of the sand. A generating means produces a series of high pressure, high temperature charges of burning gases and delivers them to the second conduit for the continuous direct application of pressure impulses to the entire vertical face of the oil sands above the standing oil level. Another means causes a constant circulation of the charges in contact with the sands, comprising a third conduit for releasing the charges from the well.

Reinforcing Pipe During Bending

This patent (No. 2,425,800), is owned by Vivian E. Hamilton, Jr., Shreveport, and is unassigned.

This means of reinforcing a pipe section to prevent its being deformed out of the round while it is being bent consists of a wrapper adapted to be laid on the section to be bent but longer than that section and devices for anchoring the ends of the wrapper to the section and operating to tighten the wrapper to the section. These devices consist of a pair of ring clamps made to be closed around the wrapper at the ends of the section and to which the ends of the wrapper are adjustably connected. These connections consist of threaded rods on the ends of the wrapper extending on a tangent across the clamps, with apertured lugs on the clamps through which rods are extended and nuts screwed to the rods. The lugs are oblique to the plane of the clamps, so that the rods extend through them.

Mud Mixer

Remie Elton Fontenot and Robert H. Dooley, Ville Platte, La., have patented this device (No. 2,425,524) and assigned one-third of the patent to Atlee P. Steckler, Ville Platte.

An inverted conical-shaped hopper has a mixing chamber connected with a restricted outlet, which it extends across, and a discharge outlet (a high-pressure fluid discharge pipe arranged axially in the chamber below the restricted outlet and ending at a point beyond the restricted outlet adjacent the discharge outlet). An air inlet pipe is supported centrally in the hopper extending through the restricted outlet and ending at a point within the mixing chamber, the upper end of the inlet extending above the hopper and having a valve means for controlling the amount of air into the mixing chamber, so controlling effectively the pressure and mixture inside to prevent packing or clogging.

Seal for Pipe Joints

Patent No. 2,421,659 is held by William J. Sutton and Benjamin C. Simpson, Houston, who have assigned it to Wilson Supply Company of that city.

As a subcombination in a union, the device consists of a seal ring having a medial annular head on its outer periphery and an inwardly extending annular medial rib in its bore, with inwardly directed annular sealing lips on each side of the rib.

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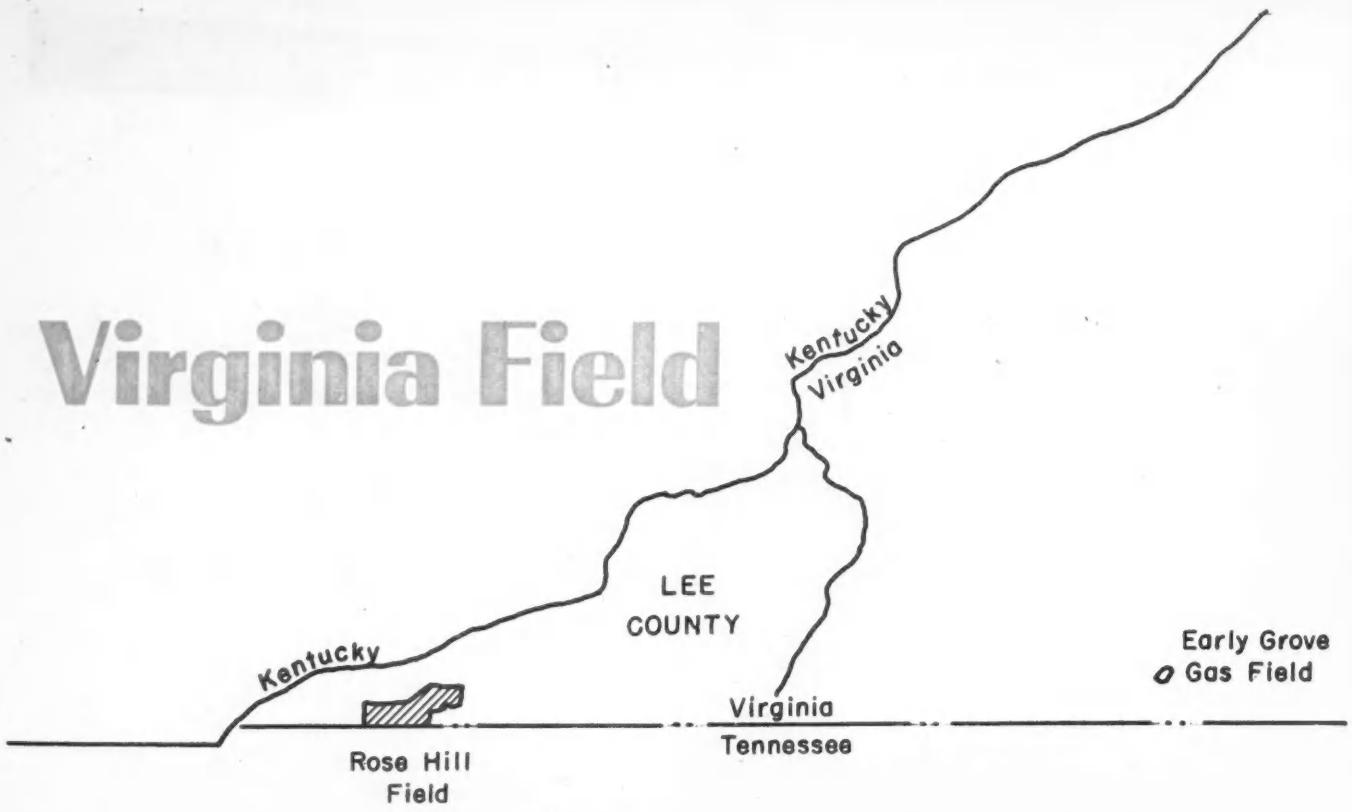

Confirms Fenster Production

By BEN H. PEARSE

GRADUAL spread of exploration in the fenster region of Lee County, Virginia, has developed profitable Pennsylvania-grade production. The field is the first east of the Appalachians, and earmarks similar structural relations in other areas for exploration. The Trenton Lime, producing horizon, is extended far beyond former producing boundaries.

VIRGINIA'S one ond only oil field, in Lee County, the extreme southwest corner of the state, has attracted considerable interest recently as a result of several completions in the Rose Hill area and publication of a map by the Geological Survey showing its unique structure. The discovery well, B. C. Fugate 1, was brought in May 7, 1942, by R. Y. Walker, of Baton Rouge, La. Capped for nearly a year, its initial production was about 60 barrels a day before it settled back to its present rate of about eight barrels a day.

In recent months, however, the Rouge Oil Company, of Baton Rouge, has had 12 successful completions and only two dry holes. All were tight holes but reports indicate production ranging from five to 50 barrels a day. One of the wells came in out of control and another was reported producing 150-200 barrels a day before settling to a somewhat lower figure.

All the completions in the area are in the Trenton lime, all vary in depth between about 1000 and 2000 feet, and all are in "fensters," areas where the rocks beneath an overthrust fault are exposed at the surface due to the local erosion of all the overthrust rocks. The crude is a clear amber, high-volatile, paraffin-base oil of 45 gravity, equivalent to the best found in the Penn-grade area.

Structural Features

The structure has several unusual features aside from being the state's first and so far only oil field, according to Ralph L. Miller, Appalachian area specialist of the Geological Survey, who recently completed a report on the area made in conjunction with the Virginia Conservation Commission.

The Rose Hill field is the first ever brought in in the folded rocks of the Appalachian Mountains and lies east of the Appalachian plateaus from which the oil and gas production of Pennsylvania, West Virginia, eastern Kentucky and eastern Tennessee comes.

It is also the first field in North America drilled in fensters in an overthrust sheet. The Turner Valley field in Alberta lies in a somewhat similar overthrust belt but the fensters which characterize the Rose Hill field are not present at Turner Valley, Miller pointed out.

The existence of structural conditions similar to those at Rose Hill in other parts of the Appalachians and in the Rocky Mountains, Miller believes, opens up new possibilities for exploration to which little attention has been paid in the past.

Standard Oil Company (Ohio) has leased acreage in the area and other companies are reported making offers for the Rouge company, which has the largest group of leases. Geologists or representatives of The Ohio Oil Company, Phillips Petroleum Company, The Pure Oil Company, The Texas Company and several smaller interests from Kentucky, New York and Illinois have been investigating the region recently.

The first well in Lee County was drilled in 1910 about eight miles southeast of Rose Hill in the easternmost of the six fensters in the area. A dry hole, it was drilled to about 3400 feet with a

THE DEEPER THEY ARE THE GREATER THE NEED FOR

CAMERON

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The men and women of Cameron Iron Works join the industry in extending congratulations to SUPERIOR OIL COMPANY for an outstanding drilling achievement on No. 1 Weller. We are naturally proud that our Type "QRC" Pressure-Operated Blowout Preventers were selected to safeguard against the destructive pressures which are so frequently encountered in deep wells.

Drilling scene on Superior Oil Company's No. 1 Weller, Caddo, County, Oklahoma.

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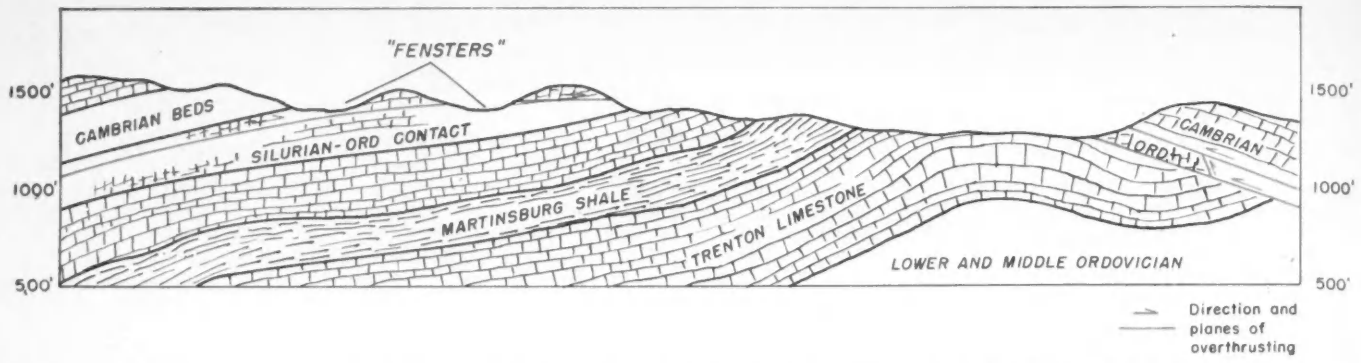


Generalized cross-section covering two miles across structural trend (N-S) in Rose Hill area, showing overthrust fault relationships and fenster occurrences.

cable rig by three different drillers over a period of five years. All data have been lost.

Local legend has it that oil seeps were the inspiration for this and the well drilled in 1921 by C. A. Bales only a short distance away. Miller found no seeps or other surface indications in any part of the area, however, and is inclined to credit the story to occurrence of an irridescent film of iron oxide on many quiet bodies of water. The first Bales well, Gilbert Lee 1, struck oil just below 300 feet in the Clinch sandstone but in going on down got salt water in the Clinch sand at 312 feet which flooded the well and forced abandonment. Bales also drilled Gilbert Lee 2 in the same area and got production from the Trenton limestone, the present producing formation, at about 1400 feet. In an attempt to make gasoline, he built a home-made still in Rose Hill consisting of a small tank with an open fire beneath and a pipe on top to carry off the vapors, but after bailing or pumping between 100 and 200 barrels the well was abandoned.

During the next 15 years, five more locally financed wildcats were drilled in this same fenster within a quarter of a mile of the original well, all of them dry holes. They varied from 700 to 3000 feet in depth but no cuttings or accurate records are available.

Rose Hill Area Project

The first well near the Rose Hill field was drilled in 1939 by O. A. Larazola, a wildcatter from Texas, who picked a location in the westernmost of the fensters in Four Mile Creek valley about three miles southwest of Rose Hill and 3½ miles west of the earlier locations. This well, Bob Lemons 1, in the south part of the fenster where surface formation somewhat resembles that in the easternmost fenster, was abandoned as a dry hole at 1400 feet after it was drilled through the Trenton limestone with only a few oil shows. The well was deepened in 1944 into the Knox dolomite at 3000 feet but was still dry.

The Virginia-Lee Oil Company, in which Walker was interested but from which he later withdrew, drilled several wells after the Trenton limestone discovery well was brought in at 1113 feet in 1942. B. C. Fugate 2 was dry but B. C. Fugate 3 has produced about three barrels a day from the Trenton since its completion in 1943. A well on the Eli Brooks farm two miles west of the Fugate wells was dry at 3200 feet and was later deepened to 4000 through the Trenton. It was still dry but did encounter a gas flow that gauged about 225,000 cubic feet a day from the Cavuga sand at 1900 feet. At present this well is shut in.

In the fall of 1945, Fred Seale and Raymond Sliney, of Middleboro, Ky., brought in Bob Lemons 2, which has been producing about seven barrels a day from the Trenton just below 1200 feet. It is across the road from B. C. Fugate 2, only about 250 feet away. Bob Lemons 3 was dry.

The Rouge company operations were started in the spring of 1946. All the earlier completed wells and dry holes in the Four Mile Run fenster had been drilled in the south half, but Rouge directed exploration to the north and northeast parts of the fenster and to date has brought in a dozen wells, almost all of which are larger producers than the discovery well. Although the completion depths have not been announced, the Trenton dips downward toward the north part of the fenster, according to Miller.

"The fault is about 25 miles long and 25 miles wide and the amount of displacement on the overthrust is about six miles," Miller reported. "The Trenton, which is not an important producing formation farther west in Kentucky and West Virginia, is folded upward toward the fenster area.

"The Rose Hill field is in a structural belt known as the Powell Valley anticline, which extends about 75 miles in a northeast-southwest direction across the border into Tennessee, varying from five to ten miles in width. Although the known fensters along this anticline are confined to the Rose Hill area, the other major structural relations are probably similar throughout the belt."

Carter Foundation Wells in Wasson Field, Texas, Are Sold

Shell Oil Company has acquired all producing properties held by the Amon G. Carter Foundation in the Wasson Field, West Texas, for a reported cash consideration of $16½ million, effective September 1.

This deal is the largest to date for the district. The properties are currently prorated to 6900 barrels daily, and invoice 60 full-interest wells—56 wells owned jointly with Continental Oil Company, and 16 wells owned jointly with Phillips Petroleum Company.

The properties produce from the San Andres and Upper and Lower Clear Fork zones. Considerable development is possible in the latter two pays. Amon G. Carter, fort Worth publisher and oil producer, assigned his extensive oil holdings to the Amon G. Carter Foundation May 1.

Texas Hearing on Offshore Leasing Set September 16

Texas' School Land Board will decide September 16 which offshore lands, if any, will be offered for lease in the November 4 bidding, Land Commissioner Bascom Giles announced.

He indicated that some operators are asking that tracts be put up in spite of the recent Supreme Court decision on tidelands, while others have requested that bidding on offshore tracts be held up until Congress has time to act on the proposed quit-claim legislations.

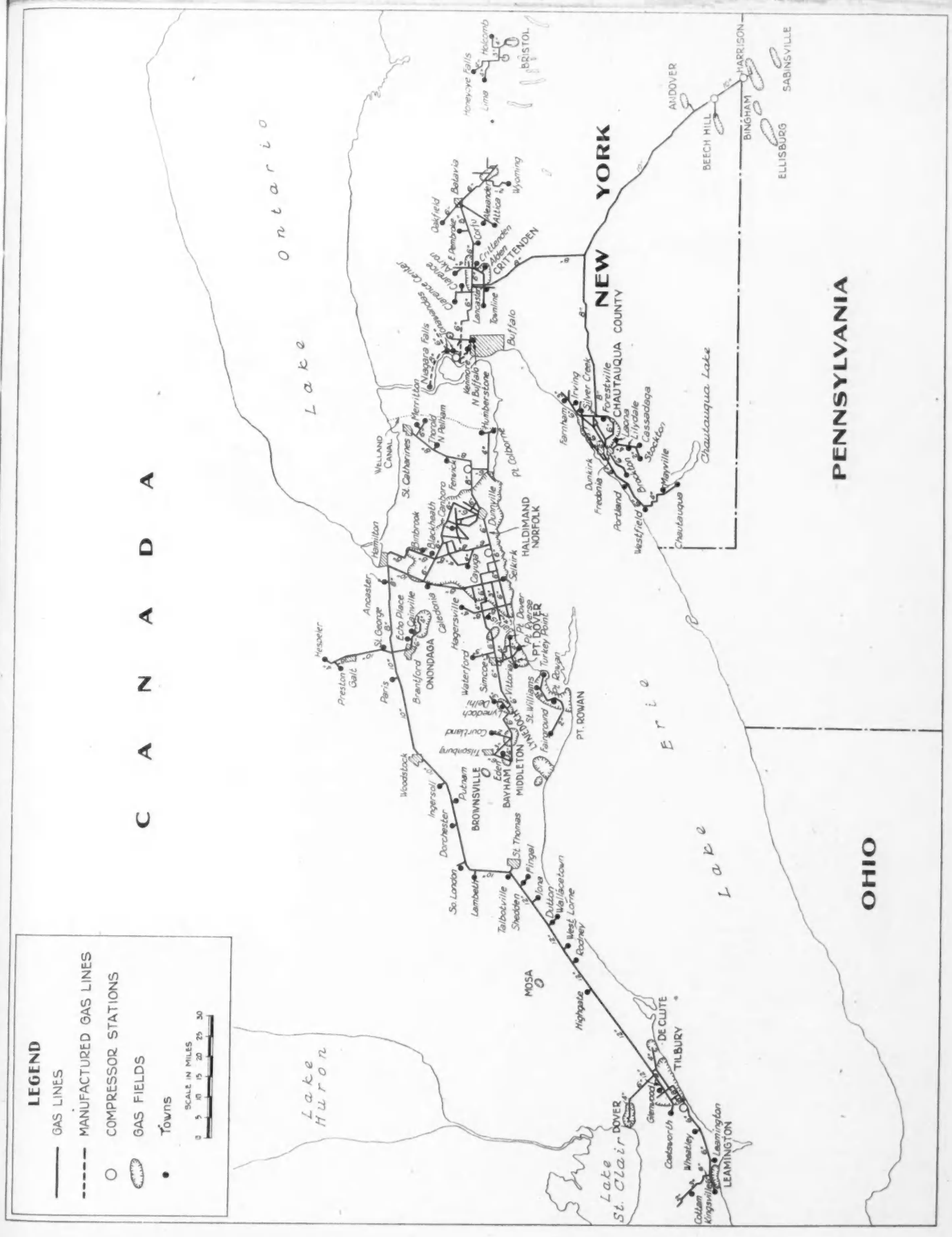
The Land Commissioner's personal view is that the tracts should be put up in spite of the decision, as a means of demonstrating determination to fight it out, and as a means of getting lease money for the school funds before it is too late, in case the fight for legislation fails. However, the decision will still be up to Governor Beauford Jester and Attorney General Price Daniel, the other two members of the board. Their views on the point haven't been made public yet, but the argument against putting up the offshore leases in November is that not many firms are willing to spend money on offshore shooting as long as the land is tied up legally.

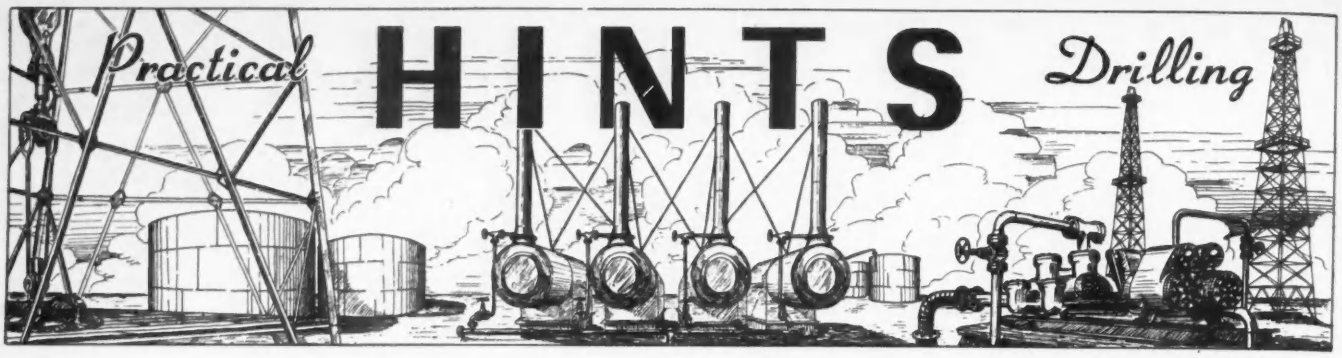
No developments have been reported by Governor Jester on his move to get other states interested in a united front on the congressional action.

Pipe Lines of the U. S.

Dominion Natural Gas Company

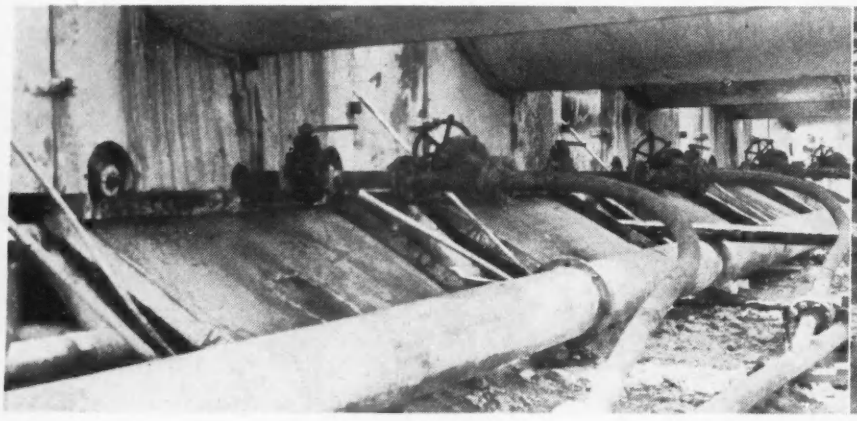
31st of a Series





$10.00 is paid for each illustrated acceptable contribution. Mail to The Editor, WORLD OIL, P. O. Box 2608, Houston 1, Texas

How To—Dispose of Boiler Wash Water with Unitized Troughs



BOILER WATER

For cleaning boilers and maintaining a neat appearance of the setting, as well as eliminating mudholes, a drilling contractor in the Wilmington, California, extension field developed equipment for the convenience of the operators and firemen. The boiler battery is supported by a triangular footing set below the firebox immediately beneath the handhole plates. Under this portion of the individual boiler is placed a heavy sheet metal pan with the upper end secured by the boiler support.

A section of heavy pipe having slots cut at appropriate points is laid beneath the waist of the battery, joined at convenient intervals with bolted flanges. The lower ends of the sheet metal pans extend into the slotted openings of the waste water pipe so that all water, scale and debris are carried to the open end, slightly lower than the other, which discharges into a sump, or into the bay as conditions permit.

This system is a permanent part of the rig and is set up on each location. When the boilers must be cleaned of sediment and scale, the waste water is carried off and does not accumulate around the boiler battery. Little expense is incurred in the construction of the waste water system, since most of the material is salvaged metal.

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WATER GAGE SET

For oil field, locomotive type and marine boilers. Water shows black — steam shows white; the water level is unmistakable. U-Bolt construction is strongest and simplest to service. Glass replaced by simply removing nuts on face of gage . . . unnecessary to work between gage and boiler. Conforms with A.S.M.E., Federal and State requirements when used for pressures specified by their respective codes.

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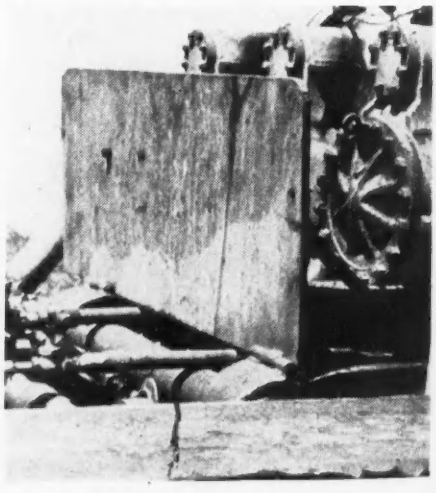
How To—Safeguard Steam End Heads

SAFE PRACTICES

The probability that cylinder heads on the steam end of mud pumps will blow off is quite remote, but there is the possibility that such might happen. There have been cases in the past when such unusual blow outs have occurred. Removing all chances that a similar accident might occur, one company devised a protective barrier between the

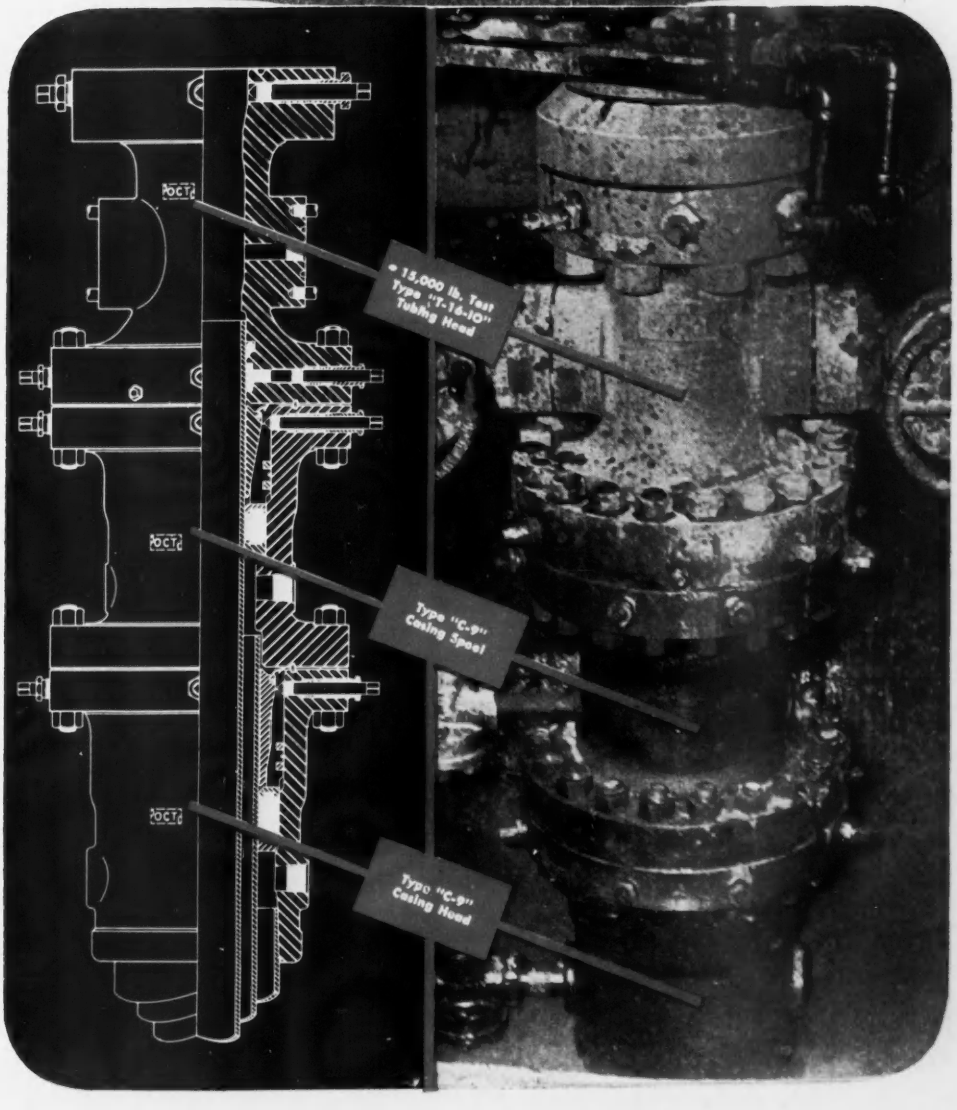


MORE THAN A MILLION POUNDS OF CASING SET IN O-C-T WELL HEADS

on the **WORLD'S DEEPEST WELL**

The photograph at right is a cellar view of Superior Oil Company's record depth well, No. 1 Weller, Caddo County, Oklahoma, showing the O-C-T well head assembly consisting of two O-C-T Type "C-9" Casing Heads in which are suspended and sealed the world's record string of 7" casing and one of the longest and heaviest strings of 9⅝" casing on record. While the entire load is not suspended on the casing slips, only a relatively small amount of the load was "slacked off" and the suspended weight is conservatively estimated as follows: 7" — 431,000 lbs., 9⅝" — 400,000 lbs. Thus the sound design and the great structural strength of these O-C-T well heads has again been demonstrated in the field. These heads were shipped out of stock and are not "special" equipment.

The tubing head shown in the photograph is an O-C-T 10,000-lb. working pressure (15,000-lb. test) Type "T-16-10."



ASSOCIATION OF WELL HEAD MANUFACTURERS CERTIFIED

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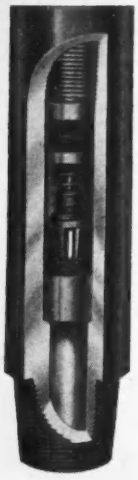
I'm a popular guy with fast-moving, safety-minded crews because I . . .



Prevent Plugged Bits

•

Avoid Pulling Wet Strings

•

Relieve Weight on Derrick

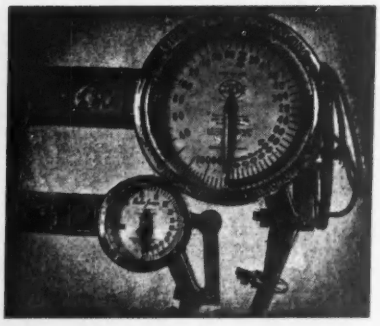
•

Lengthen Life of Lines and Brake Bands

BAKER "Bakwik" DRILL PIPE FLOAT

ASK THE BAKER MAN

LINE SCALES



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(Above) Super 500,000# capacity, 14" dial. (Below) Packer Special, Capacity 40,000#, 6" dial. 18 other models for every drilling, well servicing or work-over need.

With a Line Scale you know the pull on the line, and the weight on the bit in pounds. Accurate, sensitive, rugged and economical.

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steam end of a triplex mud pump and the board walk where the crew frequently pass. The protective barrier consisted simply of a sheet of ¾-inch plate steel designed to fully cover the steam ends of the triplex pump, with ample margin on all sides.

Outstanding feature of the steel wall is the hinge which secures it to the skid on which the pump is mounted. Each end of the steel plate is hinged to the I-beams which form the skid. The plate is held in a vertical position by two 45-degree angle braces which are bolted to the plate and to the I-beams. The hinge feature makes it possible to lay the steel plate down in a horizontal position when it is necessary to overhaul the steam end of the pump. Otherwise, the plate is left intact in the position shown during transit and during operation. Men can work and pass this point on the rig with assurance of their safety at all times.

How To—

Relieve Stress in Pump Discharge Lines

PIPE SUPPORTS

To relieve the stress occasioned by the weight of vertical pipe on pump connections, an adjustable foot can be easily made of salvaged material. A one or 1½-inch bolt is secured and threaded the full length. One end is welded into a thick piece of plate metal cut to the desired dimensions and shape, with a rounded foot. A length of two-inch tubing is fitted with a heavy butt in the base, welded securely to take the strain of supporting the required weight. The top of the tubing is fitted with a shaped piece of heavy plate steel, cut to be inserted beneath the companion flange of the control fitting and bolted in place.

An optional deviation is to place a tightly fitted sleeve in the base of the two-inch standard through which the threaded bolt enters, and make necessary adjusments with a heavy nut between the end of the two-inch standard and the supporting foot.

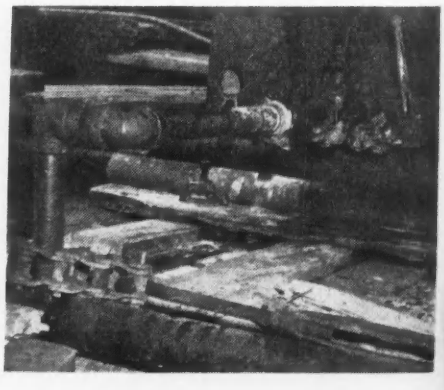
How To—

Anchor Boiler Blowdown Lines

STEAM LINES

The boiler blowdown line must resist severe end thrust when hot water and steam roar from its open end. To relieve the fittings on this line and the boiler connection of this strain, one drilling contractor anchors the line against endwise thrust. A section of drilling chain is taken in a turn around the line and anchored through a turnbuckle to the boiler support. By taking up on the turnbuckle, there may be set up tension to oppose the thrust of the blowdown.

The hitch is made long enough so that it does not bind the line if expansion takes place between boiler and blowdown main. A piece of board through the turnbuckle will hold it against vibration and prevent slackening of the anchor.



becomes a monthly publication

publications, was showing a gain over the previous year, and when the profits of the company were at the most satisfactory point in its history.

The decision was not easy to make, and when we began planning the kind of publication we had long wanted to produce, we found that, again, the road was difficult.

To begin with, it called for more planning than is ordinarily found in a business publication based upon news. It called for more alertness as to the problems of the industry. It called for a willingness to have a staff man spend weeks on just one article which, when completed and published, would occupy only a couple of pages. It called, we have found, for the editorial staff to develop some important changes in its own thinking, and finally it called for a staff of editors several times as large as that of any other monthly oil publication.

Editorial Material Will Be Sectionalized

Our new plans will provide for some features hitherto found only to a limited extent in our publication.

First, there will be a section devoted to an analysis of the news of the preceding month, giving something of its effect on the oil production-pipe line business.

Then there will be a section devoted to highly important special analytical articles on subjects of the liveliest interest to the industry—articles involving, on the whole, a great deal of research. The monthly review, in tabular form, showing new discoveries, deeper sands and extensions, with comments—an exclusive WORLD OIL feature—will be retained. The monthly well completion summary also will be continued. This section alone can be well worth the subscription price—and a lot more.

There will be sections devoted to drilling, production and pipe line practices, embracing staff articles and articles by men within the industry, new ideas and the ever popular "How to Do It Hints." A new type of report on pipe line construction, including plans and progress, will be added as a regular feature.

International Coverage to Be Expanded

The present section which appears once a month on International oil affairs will be expanded, giving the domestic subscriber, as well as the subscriber abroad, a world-wide picture.

The usual departments on new equipment, reports on the personnel of the industry, new faces, promotions, transfers, deaths, will be continued. A book review on petroleum literature will be a monthly feature—and of course, "Squeaks From the Bullwheel." There will be no spot news reporting in WORLD OIL. This applies to field development news as well as national affairs.

Editorial Staff at Work on October Issue

Our staff has had an especially hard burden during the past two months, "getting out" the weekly publication and getting lined up for the monthly. Vacations have been a real treat! And now our editors and staff are settling down to do the job all are enthusiastic to see accomplished. There will be no let-up in their travel. Contact with the industry, at home and abroad, is a *must* under our new plans.

We know you are going to like the new WORLD OIL. Its cover will look just as the weekly WORLD OIL has looked . . . but the publication will be much thicker, more comprehensive, and, we are confident, more interesting and more valuable to you as a subscriber.

Sincerely,

R. L. Dudley

Publisher, WORLD OIL

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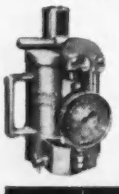

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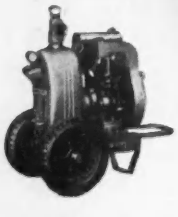

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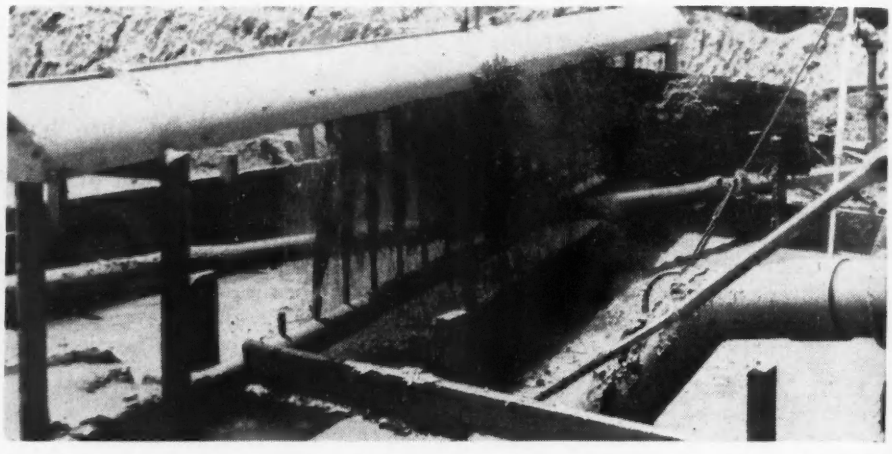
How To—

Cool and Aerate Drilling Fluids



Maintaining adequate control of mud when drilling through gas sands at great depths is a difficult problem because of the excessive heat sometimes found in the lower formations. Because of the formation pressure it is necessary that a heavy mud be carried which intensifies the problem since the gas may remain trapped in the fluid. A very practical solution to this problem of temperature and gassing was adopted by one company which solution proved inexpensive and effective.

MUD CONTROL

The hot, gas-laden mud flowed into the settling pit located adjacent to the sump pit. The mud mixing pump was used to pump the hot fluids from the settling pit into the sump pit; however, it was possible by means of an overflow ditch to allow the mud to flow from one to the other as in common practice. The treatment described was only necessary below a certain depth, down to which no aerating was prescribed.

The mud mixing pump picked the hot mud from the settling pit and discharged it into the aerating device illustrated, which consisted of a long section of four-inch pipe spanning the sump pit. Spaced at 12-inch centers were short nipples of one-inch pipe which acted as orifices for the aerator. The end of the four-inch section was blanked off so the mud was forced through the short nipples welded to the main section. A jetting action resulted with a stream of mud erupting from each opening, as the mud fell into the sump pit, the trapped gas was released and at the same time the air cooled the mud. A hood made from sheet metal and supported at both ends by an inverted "U" prevented the fluid from spirting high into the air and being blown over the rig or crewmen.

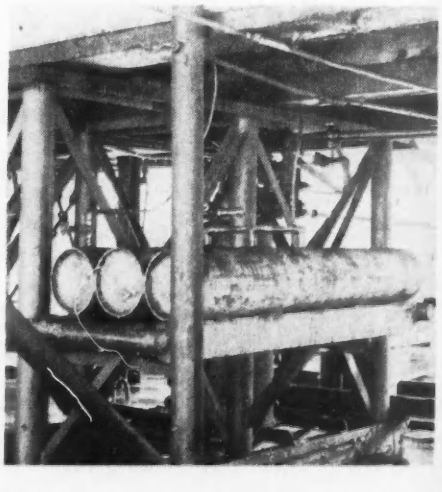
How To—

Locate Air Tanks

Proper location of air storage tanks providing air pressure for pneumatic equipment about the rig is sometimes a problem. The tank should be located so as to minimize the piping from the compressor and to the equipment requiring air pressure. One company placed their air storage tanks on a permanent platform which formed an integral part of the substructure, just beneath the drawworks. It is in such a position that mechanics may inspect and service the unit with little difficulty.

TANK SETTING

A skid-type base is made with transverse bars to support the tanks which are tack-welded to the base. The base, in turn, is bolted to the vertical members of the substructure so that the entire assembly can easily be removed for replacement or overhauled for cleaning, etc.

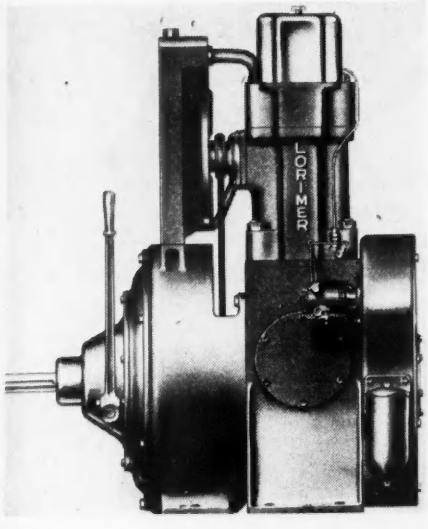


NEW EQUIPMENT LITERATURE

FOR ADDITIONAL INFORMATION, USE MAILING CARD INSERTED OPPOSITE THIS PAGE

1—Heavy-Duty Diesel

Known as the "Sturdy Scot," a new single-cylinder stationary engine is a vertical four-cycle full diesel, has a bore of 5¾ inches and a 7½ inch stroke.



Horsepower is ten at 600 revolutions per minute, 12 at 720, and 14 at 800.

Principal feature is a simple, rugged design and slow-speed operation. The 3¾ inch diameter chankshaft is carried on two Timken roller main bearings; force feed lubrication is provided for main, crankpin and wristpin bearings. The piston is 9⅛ inches in length and carries five rings. Fuel system consists of standard heavy-duty pumps and injector. Heavy-duty filters are provided for both fuel and lube lines.

Standard equipment includes governor, lube pump, fuel and lube filters, tools and instruction manual. Optional equipment includes power takeoff clutch, heavy-duty radiator, water pump, fuel transfer pump, electric or air starting equipment, or impulse magneto for manual-gas starting.

Standard models are full diesels. Models for operation on natural gas are available on order.

According to Lorimer engineers, the slow-speed heavy duty design of the "Sturdy Scot" permits long periods of continuous service without attention and assures maximum service life. Simplicity of the engine makes it possible for any ordinary mechanic to start, operate, service or overhaul it without difficulty.

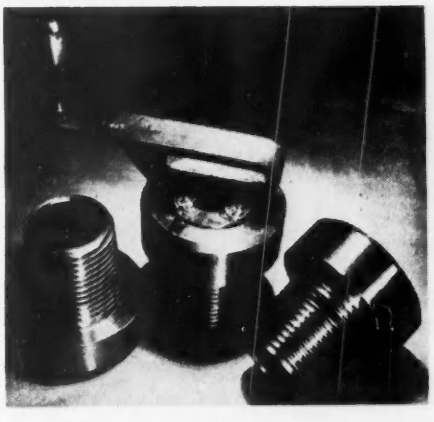
For additional information write Lorimer Diesel Engine Company, 16th & Woods Street, Oakland 7, Calif.

2—Safety Lock Lift Plug

Positive safety in handling external flush tubing and drill pipe with collar-type elevators is provided by the new "Safety Lock" lift plugs. Because of a unique thread-locking feature, it is impossible for the plugs to become disengaged while pipe is being handled.

The Safety Lock is a hardened steel key or finger, mounted in an off-center position inside the plug and extending thorugh a slot cut in the threads. Its outer end is of the same size and form as the thread section which was removed when the slot was cut in the plug. The key travels horizontally in the slot. Because of the off-center mounting, movement from left to right causes a gradual recession; movement from right to left, a gradual advancement. In the center position, the end of the key is equal with the major diameter of the threads. Left of center, it begins to exceed this diameter; right of center, it recedes below this diameter. In its normal or inoperative position, the key is held against the left end of the slot. In this position, the end extends beyond the major thread diameter on the plug.

Design and position of the "Safety Lock" permits free right hand movement while the plug is being made up in a tool joint; yet, left hand or "backing-off" movement is positively prevented. So positive is the locking action that it is no longer necessary to make up lift plugs with tongs or wrenches. They may be made up hand tight, with full assurance that they will not accidentally disengage.



The following sizes are ordinarily carried in stock for immediate delivery: 2⅜, 2⅞, 3½, 4 and 4½-inch. Sizes other than those shown can be furnished upon special order.

For additional information write Houston Oil Field Material Company, Inc., 2101 South Wayside Drive, Houston.

3—Crane

Mounted on a Model UTI Minneapolis Moline Tractor, the Type U Crane has a high lifting capacity of from 1½ to four tons, yet its buiders state that it offers easy steering due to its special steering gear with roller-bearing knuckles. Enclosed stabilizers permit full front axle movement for smooth traveling, yet provide positive support when swinging a load. Radiators and wheels are protected against damage from swinging loads by the extra heavy radiator guard and box-type bumper. Rugged front end construction includes a 72-inch axle, heavy steering spindles and reach rod, and heavy cast wheels. Lower ground bearing pressures are provided by wide 28 x 10 inch solid cushion tires.

The all-welded steel boom is raised and lowered by a hydraulic cylinder mounted on the gantry and controlled by a valve at the right of the steering wheel. This hydraulic action provides independent boom topping with absolute speed control. The full-revolving turntable rides between two rows of large-diameter steel balls, running in flame-hardened races grooved in the all-steel turntable castings. The rugged frame with heavy front yoke transmits all loads directly to the front and rear axles, positively eliminating strain on the tractor transmission housing or engine case.

For additional information write the Joshua Hendy Corporation, 206 Sansome Street, San Francisco.

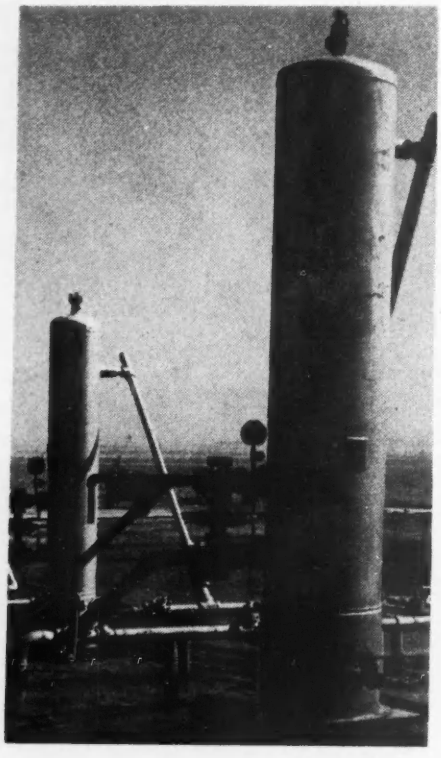
4—Autotrol Separator

The Autotrol separator, a floatless separator or gas trap, embodies a radically different means of controlling oil and gas flow. The system has no stuffing box and no moving parts within the tank. Differential pressure of the gas and oil within the tank, acting upon an enclosed diaphragm outside, actuates the dual valves controlling the flow of separate oil and gas flow.

The control mechanism consists of two valves directly connected to each other by a single stem operated by an intervening diaphragm. Pilot lines from the oil and gas outlets lead to the lower and upper sections, respectively, of the diaphragm chamber so that actual movement of the diaphragm becomes a function of the liquid level within the shell. The weight of the assembly normally holds the oil valve closed until the liquid in the shell rises to a level a few inches above the level of the diaphragm. Beyond this point an additional rise of less than one inch completely opens the oil valve and closes the gas valve.

The entire valve assembly is mounted

on the outside of the separator. Housing of the single moving part prevents damage from tampering or exposure to



the weather. The pressure-regulated control requires no manual adjustment either prior to installation or at any time during operation, and will adjust itself immediately to conform to gathering line pressures. Instantaneous valve action and dual control substantially reduce the hazard of discharging oil into the gas line and gas into the oil line. Autotrol is said to eliminate the need for back-pressure regulators because the gas discharge valve automatically controls the pressure within the tank, thereby forcing the oil into the oil gathering lines. Lastly, the incoming oil inlet provides an effective means of handling foaming oil. The incoming oil falls directly on the surface of the oil within the shell, thereby continually breaking down the bubbles of foam.

Three sizes are available to accommodate a wide range of producing volumes, pressures, gravities and gas-oil ratios. Special separators will be constructed to meet extreme or unusual conditions which the three standard types will not handle. Careful design and precise construction have made all parts interchangeable. Construction of the Autotrol conforms to ASTM standards throughout.

For additional information write Baroid Sales Division, National Lead Company, 830 Ducommun Street, Los Angeles 12.

5—Electrode

EutecTrodes 67 AC and 670 DC have a high alloy content developed for joining, filling, filleting and overlaying all types of steel where high tensile and impact strength; good heat, corrosion, and wear resistance; and high hardness values are required. It also can be used as an overlay material on cast iron. Many use it as a universal steel electrode.

This alloy is especially useful for rebuilding chemical agitator beads, welding of stay bolts, salt-water pipe lines, and similar parts that are exposed to extensive corrosive action.

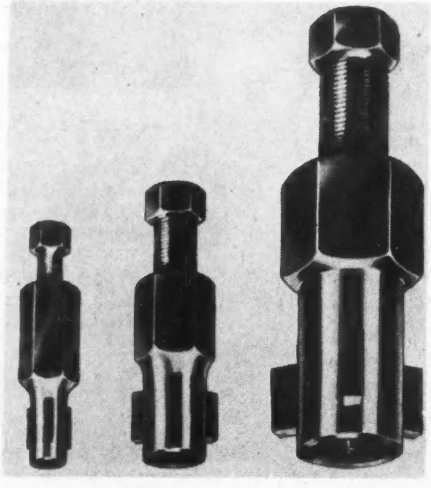
EutecTrode 67 AC is a special flux-coated electrode for arc welding, and EutecTrode 670 DC is developed for DC arc welding. It is fast flowing, smooth operating with no spatter, and free from undercutting. Slag inclusion and poor fusion are eliminated by the washing of EutecTrode 67 on the sides of the groove. EutecTrode 67 is available in sizes 3/16, 5/32, 1/8, and 3/32 inch diameter.

Eutectic Welding Alloys Corporation, 40 Worth Street, New York 13.

6—Internal Pipe Wrench

A new type of internal pipe wrench that is claimed to have sufficient strength to strip a thread without losing its grip is now being offered for universal maintenance work. Known as the B & D Internal Wrench, this unique patented tool has been successfully tested for several months in quickly and easily removing broken pipe, close nipples and gate and globe valve seats. It consists of a screw-type mandrel that forces outward three gripping dogs until they bite firmly into the inside of the pipe. Then, with the application of any standard wrench, the pipe or nipple is quickly turned loose and removed.

The wrench may be used on nickel, chrome or brass fittings. The gripping dogs are of hardened tool steel and the body is of high tensile steel alloy. It is fully guaranteed against faulty materials and workmanship. Available in eight sizes, ranging from ½ to 6-inch, it is sold individually or in sets. Special long body (5¾-inch) wrenches are also available in ½, ¾ and 1-inch sizes.

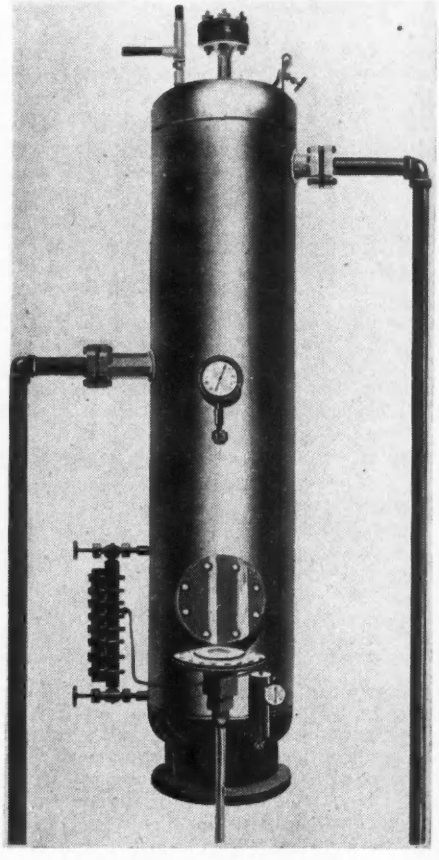


For additional information write Porst Sales, 132 West Union Street, Pasadena 1, Calif.

7—Pressure Separator

Following the familiar BS&B design in most respects is a small separator, the 20-inch, 1000-pound model, which is scaled down to provide a small, inexpensive separator which will meet the gas-handling capacity requirements of many wells and leases.

One feature in which this separator



differs from previous models is the design of the oil valve, which is a pilot-controlled type presenting a new idea in the controlling master pilot. It makes the application of a double-acting diaphragm without springs feasible for the first time. It is manufactured in a one-inch, single seated, snap-acting type which is tightly closed or fully opened to minimize the plug and seat erosion commonly caused by wire-drawing.

The master pilot which controls the oil valve requires little float force for its operation. The entire oil valve and float gear design is a new approach to the problem of securing proper float operation in high pressure separators with low vapor-liquid differential densities.

Black, Sivalls, & Bryson, Inc., 720 Delaware, Kansas City 6.

8—Electric Valve Control

Applicable to air, water, oil, gas and steam at low or high pressures and high or low temperatures is the electric valve control for gate valves with either side to the upstream pressure. The control is a two-way solenoid controlling a lever to which is attached two control valves. These control valves regulate the back pressure on the closing piston. The valve is opened by line pressure and closed by a compressed spring. Valves can be

Could you get a raise if your company stopped advertising?

Suppose your company were to divide up its advertising appropriation among all its employees—in the form of bonuses, let's say, according to the sales you made or the amount of work you turned out. Would you be better off?

Well, for a while you might be. For a few weeks, or even months, you and your company might coast along on a business-as-usual basis. Plenty of orders on the books. Lots more where they came from. Plus all that advertising money you'd be saving.

Or is "saving" the right word?

If your investment in advertising has paid off, how can you possibly *save* anything by stopping it? The real question is—how much do you stand to *lose?*

Curiously enough, you can't actually see what you're losing—at first. By the time you can, it's too late.

It's too late when some of your old customers begin drifting away. When new ones become harder to convince. When your competitors (who aren't "saving" a dime on *their* advertising) take over business that you have lost by default.

Once that happens, the cost of getting back into your stride may far exceed what was lopped off the advertising schedule in the first place.

There was one manufacturer, for example, who sought to "economize" by stopping all his advertising for two years. At the end of that period, his entire sales force, when asked for recommendations, put advertising at the head of the list as the one thing they couldn't afford to be without. But it takes a lot of advertising effort to overcome the inertia of a stalled selling machine—and the manufacturer eventually had to spend a lot more than he though he had "saved" to get the machine going again.

There are a *lot* of companies who had to learn this the hard way. The expensive way. But the time for expensive things is not now.

Advertising probably isn't your job. But you may have a voice in it some day, and certainly you have a big stake in it now. Because your company can't grow by *making* things—it can only grow by *selling* them. Advertising is simply selling on a mass-production basis.

Especially when it appears in the right business papers, advertising is the cheapest, the most efficient kind of salesmanship there is. That's because the readers of these papers are all alike in one respect: they comprise the greatest concentration of ambitious, dissatisfied, information-hungry people ever driven by a common interest. In both the editorial and the advertising pages, they look for, and find, the kind of ideas and information that will help them do their jobs better, and get ahead faster.

Call it enlightened self-interest. But isn't that why you yourself read this magazine?

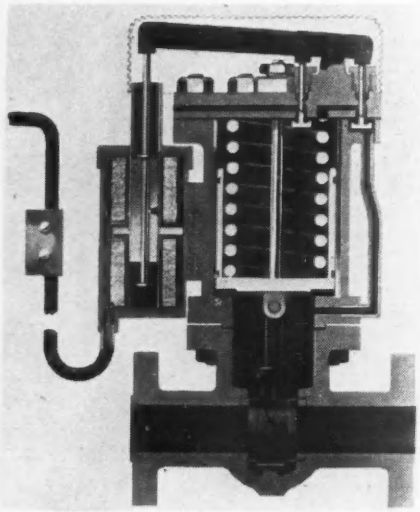
WORLD OIL

is a member of The Associated Business Papers

We have an interesting little folder which we think you'd like to see. It's called "What Does *No* Advertising Cost?" You can get your copy by writing to this publication. It's free—no obligation, except to maybe yourself.

supplied to operate at a pre-determined speed. High-pressure valves can be operated in only a few seconds.

Only three wires to the valve control



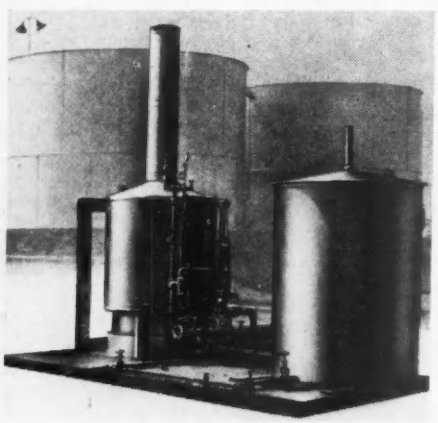
and two control switches at the operating center are required to control the valve. Since the solenoid coils need be energized only momentarily, the control will operate on either 110 or 220 AC or DC current. No current is required to maintain the valve in either open or closed position. Contact on one switch for only a few seconds energizes the solenoid coil and opens the valve. Contact of the other switch closes the valve.

No exhaust is required to maintain the valve in either open or closed position. A small amount of exhaust is vented only as the valve moves from closed to open position. When closing off a large volume of moving liquid, excess surge or "water hammer" is minimized because speed of closing is self-governed by a carefully calculated spring pressure. Valve controls are available for the operation of valves from one inch up and for pressures ranging from 25 to 6000 pounds per square inch.

For additional information write Shafer Valve Company, Inc., 203 Citizens Building, Mansfield, Ohio.

9—Oil Heaters

Fifteen- and 25-horsepower Lodi steam type oil heaters are being produced in quantity. The manufacturer



states that six years of field operation on Southern California leases have established the following advantages of Lodi oil heaters: low first cost, low operating cost, simplicity of maintenance, and fast, reliable removal of hydrates.

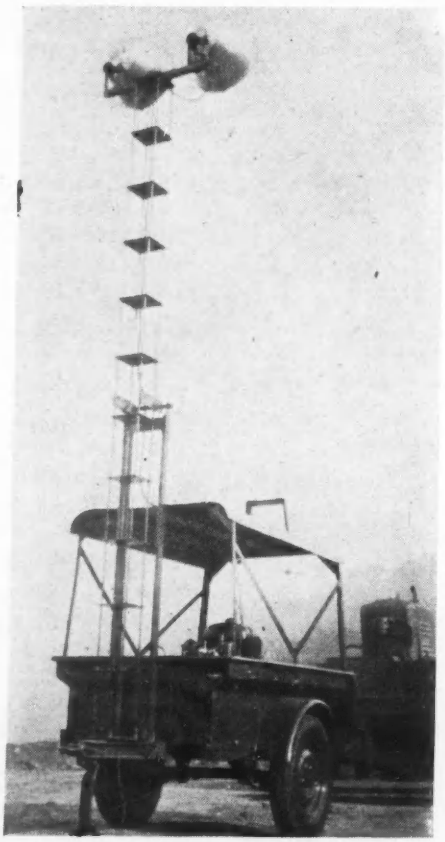
The Lodi heaters have no electrical controls or motors. A self-actuated steam pump is the only working unit. The boiler is fired by field gas, and develops 150 pounds pressure from a cold start in five minutes.

A positive shutoff valve controlled by water flow cuts off fuel to the burner in event of water supply failure. The boiler has a flash-type tube construction which is explosion proof.

For additional information write Super Mold Corporation, Lodi, Calif.

10—Trailer Floodlights

A portable 3000-watt light tower and generator unit mounted in a half-ton, all-steel utility trailer has been developed to provide adequate lighting for night



construction projects, and other applications.

The welded steel tower operates on a hinge fastened to the trailer canopy. On top of the tower are two 1500-watt clear globes in reflectors. When erected, the tower is 18 feet high; when folded, it has approximately nine feet of road clearance. The lights are pivot-mounted and have adjustable beam and spread.

Welded to the steel bed of the trailer is a gasoline-powered generator. It has a five-gallon fuel tank and can be started automatically, providing AC power for the lights almost instantaneously. A 12-volt circuit for battery charging also is included.

The generator weighs approximately 460 pounds, the tower and other equipment total about 440 pounds, making the gross weight that must be carried by the trailer 900 pounds.

Arrow Supply Company, Pittsburgh.

Literature

11—Diesel Engines

A 28-page bulletin describes and illustrates how Superior stationary diesels are designed and built. It carries 46 photographs, 8 performance charts, standard and special equipment tables and 5 dimensional blueprints, including foundation sizes and amount of concrete required. Horsepower ratings and specifications are given for all engines, both supercharged and non-supercharged.

Copies of the stationary diesel bulletin, No. 4705, may be obtained from the general sales office, Superior Engine Division, The National Supply Company, Springfield, Ohio.

12—Air Filters

The application of replaceable air filters for ventilating and air-conditioning systems is explained in an eight-page booklet. Descriptions and illustrations of each type filter are given, along with instructions for maintenance and detailed engineering and installation data.

A copy of this booklet may be obtained from the American Air Filter Company, Inc., 215 Central Avenue, Louisville 8.

13—Pipe Lines

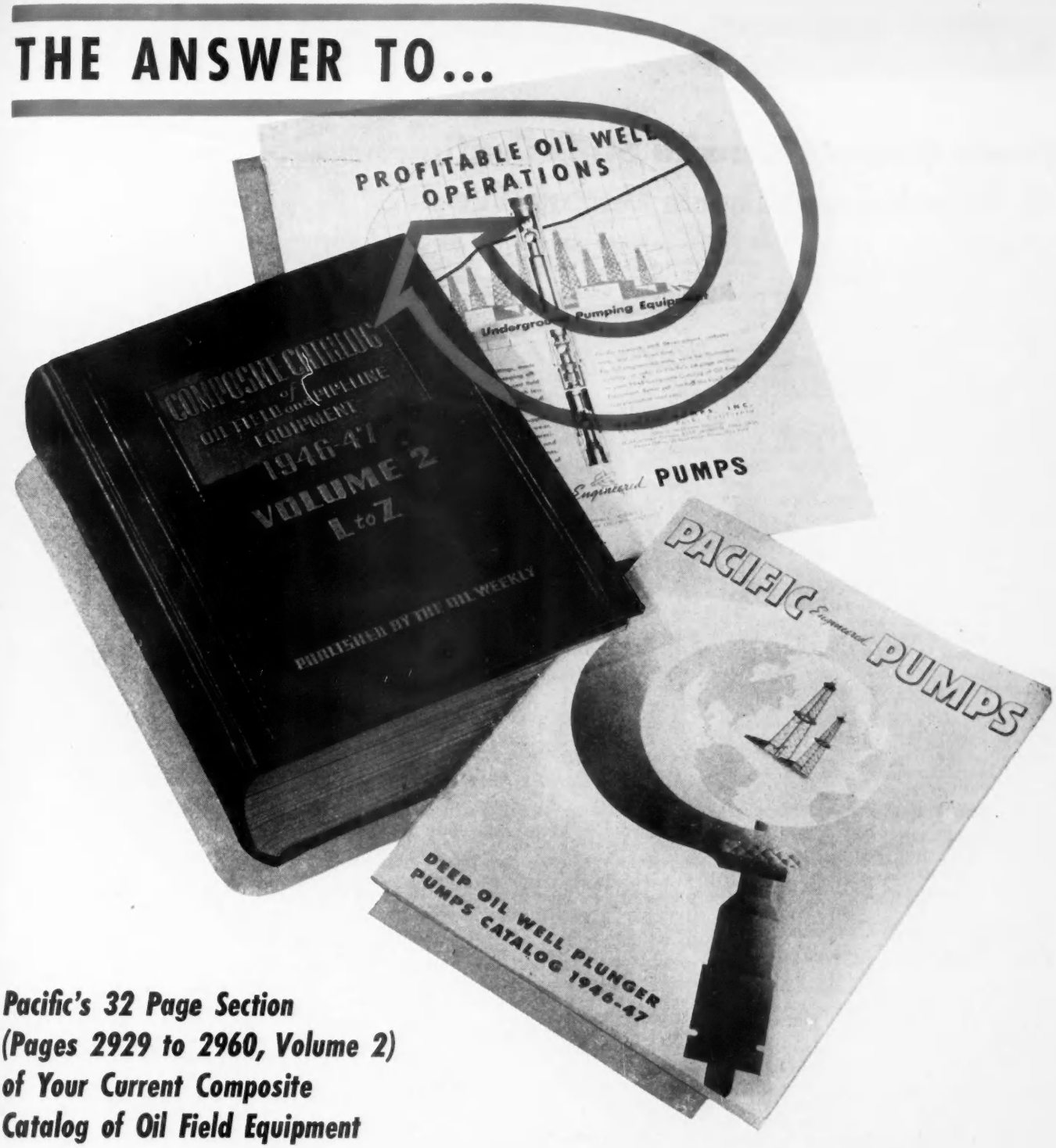
Available upon request is a 55-page catalog and data book including illustrations, detailed information and specifications on the complete line of pipe line equipment and supplies. In addition to illustrations and data on the Perrault line of travening pipe cleaning, priming, coating and wrapping machines, the new catalog gives data on pumps, compressors, pipe straighteners, kettles, blocks, hooks, rollers, pipe handling equipment and the numerous other pipe line supplies and equipment carried in stock. For additional information write Perrault Brothers, 1130 North Boston Street, Tulsa 6.

14—Nylon Rope

A new folder describes "Stabilized" nylon rope. Six advantages of this man-made fibre rope are briefly mentioned. The results of stabilization and what it does to nylon rope are pointed out, in addition to pictorial evidence. Weight and strength tables are included as well as some of the physical characteristics of this stabilized nylon rope.

A copy of this folder may be obtained from Columbian Rope Company, Auburn, N. Y.

THE ANSWER TO...



Pacific's 32 Page Section (Pages 2929 to 2960, Volume 2) of Your Current Composite Catalog of Oil Field Equipment

...Carries a wealth of information and the answer to profitable operations. Valuable charts, engineering and technical data, complete listing of Pacific Precision Engineered Oil Well Pumps and Parts, illustrated in color and indexed for quick reference—all combine to make this a section of vital interest and value to the oil engineer and buyer alike. For unusual problems or requirements which may be encountered, contact...

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Crude Output, Runs to Stills Continue At Near-Record Levels During Week

Crude was produced and refined at near-record levels in the week ended August 30, the latest report of the API showed. This continued high refinery activity resulted in increased output of all principal products and brought supplies fairly well in line with demand. Stocks of all products showed satisfactory additions, including gasoline at a time when use of that product is at the year's high point.

Production of crude averaged 5,127,000 barrels per day during the week of August 30, an increase of 4000 barrels a day from the previous week and only 2000 barrels per day less than the all-time high reached two weeks earlier. This was 324,000 barrels a day or 6.7 percent more than was produced in the like week of last year.

Athough crude runs to refinery stills were kept at a high level, the week's daily average showed a drop of 8000 barrels from the previous week's runs and amounted to 5,209,000 barrels per day. These were 308,000 barrels a day or 6.3 percent greater than runs a year ago.

Stocks of refinable crude totaled 227,642,000 barrels on August 23, according to the Bureau of Mines' latest report. That was an increase of 1,566,000 barrels during that week and 1,970,000 barrels more than was on hand a year before.

Gasoline production in the week amounted to 16,753,000 barrels, an increase of 214,000 barrels over the previous week's output and 1,348,000 barrels or 8.8 percent more than that of last year's week. At the height of the summer's motoring season, gasoline stocks showed a small increase. At the end of the week stocks totaled 84,105,000 barrels to show a gain of 190,000 barrels. A year ago stocks of this product were 2,708,000 barrels or 3.1 percent higher than this latest tabulation.

Distillate fuel oil production showed an increase over the previous week and amounted to 5,919,000 barrels, which was an increase of 545,000 barrels or 10.1 percent over output a year ago. Stocks of this fuel gained 1,790,000 barrels total 54,808,000 barrels at the week's end. That amount was slightly less than 1 million barrels more than was in storage a year before.

Output of residual fuel totaled 8,962,000 barrels in the week, an increase of 288,000 barrels over the previous week and 605,000 barrels or 7.2 percent over last year's week. Stocks climbed 554,000 barrels to 55,242,000 barrels to top last year's figure by 2,205,000 barrels or 4.2 percent.

Wide Spacing in Chitwood Pool, Oklahoma, is Asked

Wide spacing for gas-condensate wells in the Cunningham sand zone of the Chitwood pool in Grady County, Oklahoma, is asked by Magnolia Petroleum Company.

Witnesses for the company told the State Corporation Commission that wide spacing of the wells is necessary if the source of supply is to be effectively developed. Magnolia seeks a pattern of one well for each governmentally surveyed quarter section, through Secs. 3 and 4 and the north half of Sec. 10 in Twp. 4n-6w, and Secs. 33 and 34 and the south halves of Secs. 27 and 28 in Twp. 5n-6w. Wells would be in the center of the southeast 40 acres of each quarter.

Plant to Be Enlarged

As a step toward further utilization of gas produced in the Wasson Field of Yoakum and Gaines counties, Texas, plans were announced by Shell Oil Company, and Coltexo Corporation for the construction of an extension to their jointly owned Wasson No. 2 gasoline plant. The extension, which is designed to process an additional 24 million cubic feet of gas daily from the Wasson field, is slated for completion early in 1948.

Year's Sixth Price Increase Made for Penn-Grade Crude

An increase in prices for Pennsylvania grade crude, the sixth so far this year, was announced last week by Joseph Seep Purchasing Agency of the South Penn Oil Company. This advance, amounting to 20 cents per barrel, boosted this grade to its highest point in 23 years.

The increase by Joseph Seep, the leader in Pennsylvania crude prices, was quickly followed by several other major buyers, with more expected to join soon. It brought prices for this crude 95 cents per barrel higher than they were at the end of last year, and $1.50 above OPA wartime ceilings. At $4.50 per barrel, Bradford-Allegany crude is now priced the highest in 23 years, or since May, 1924, when the Seep Agency last posted that same amount.

In addition to this latest 20-cent raise which became effective September 1, other advances this year were January 1, 10 cents; March 1, 16 cents; April 1, 10 cents; May 16, 14 cents; July 1, 25 cents.

New price postings are Bradford-Allegany crude in Bradford Transit and National Transit Lines, $4.50; Pennsylvania grade in Southwest Pennsylvania Lines, $4.29, in Eureka (W. Va.) Lines, $4.29, and in Buckeye (Ohio) Lines, $5.25. Corning grade crude purchased by this company was not affected by this raise, as it had been upped 25 cents to $2.60 per barrel a week earlier.

The company made no comment in announcing the advance, but in explaining other raises earlier this year had pointed to competitive bidding by buyers of this oil.

Pennzoil Company and Valvoline Pipe Lines, the latter a division of Freedom-Valvoline Oil Company, announced on September 2 that they were meeting the 20-cent raise and made new postings for the crudes they purchase.

Several grades of light fuels were priced higher last week by an Arkansas refiner, and another in Kansas reported advancing his gasoline, kerosine and No. 1 fuel oil quotations. Although prices were unchanged along the East Coast, buyers still were shopping for all products, and suppliers at New York harbor reported still receiving premium offers for gasoline, kerosine, Nos. 2 and 6 fuel oils. Inquiry for all products remained active on the Gulf Coast but trading was described as "very slow" over the holiday weekend.

Cenozoic Strata Correlated Through Southeastern Area

W. E. Wrather, Director of the U. S. Geological Survey, announced that the Survey has published a chart showing new correlations of Tertiary strata that crop out in Mississippi, Alabama, Georgia, and Florida.

Rock formations of Cenozoic age, including the Tertiary rocks, form the land surface of all of Florida, the southern half of Georgia and Alabama, and about seven-eights of Mississippi. They are the source rocks of a large part of the non-metallic resources of these states, and petroleum geologists use key beds in them for working out underground structure in the search for new oil fields.

Intensive studies by the Geological Survey during the past several years have led to new views on correlation of the Tertiary formations. Several new units have been recognized and the correlation and age assignments of many of the formations have been changed. The new chart shows the present concepts of the correlation of surface formations within the area and a brief discussion of the reasons for the correlations is printed on the same sheet.

The chart, titled "Correlation Chart for the Outcropping Tertiary Formations of the Eastern Gulf Region," by F. Stearns, MacNeil, is printed on a single sheet measuring 22 by 23 inches and has been published as Chart 29 of the Oil and Gas Investigations series. Copies may be purchased at 20 cents each from the Director of the Geological Survey, Washington 25, D. C.

LPG Industry Fights Bill

The liquefied petroleum gas industry in Alabama will oppose a bill that would make the distribution of liquefied petroleum gas a public utility in that state by amending the Public Utilities Act. The bill is to come up for public hearing September 10.

Strike Ends

An 11-day strike of almost 500 AFL petroleum transport drivers in the Chicago area ended last week when management signed a contract specifying a standard starting and quitting time for day and night shifts.

• Oklahoma

Four Oil Pools Are Opened; Carter-Knox May Be Extended

Four oil pools opened within 10 days; wildcat opening pool southwest of Sylvian area; Carter-Knox field may be extended south; East Lindsay area apparently defined on east side.

Drilling activity in the southern, central and northern portions of Oklahoma has been increasing steadily, and within a 10-day period 4 oil pools were opened to increase the state's crude production.

Mudge Oil Company of Dallas found deep production in northern Stephens County with Sembritzky 1, SE NW SE 24-1n-7w, about 7 miles north of Duncan. On a 32-minute drill-stem test of the Hoxbar sand at 7185-200 feet, the well flowed 15-20 barrels per hour through ½-inch choke on tester. The sand was topped at 7182 feet. Crew probably will core deeper into the sand before setting casing to complete. Location is on an old subsurface structure and the nearest production is in the Cruce field, 7 miles east.

Deep Rock Oil Corporation has opened production north of Lake Shawnee, in Pottawatomie County, with Black 1, SE SE NW 17-10n-2e. The well flowed 303 barrels of oil in 8 hours through various-sized chokes from the Wilcox sand at 6021-26 feet. The well was shut in pending completion of pipe line connections.

Warren Petroleum Corporation's Burgess 1, NE SE NW 8-21n-1w, northwest of the city of Perry in Noble County, has opened Wilcox sand production. The well flowed 50 barrels of oil per hour on drill-stem test of the formation at 5167-68 feet. Pipe was set at 5166 feet and the test is being completed.

Stanolind Oil & Gas Company found Hunton lime production a mile southwest of the Witcher gas-distillate field in central Oklahoma County with Reinhart 1, CSW SW 30-13n-3w. The test flowed 120 barrels of oil per hour from the basal Pennsylvanian unconformity at 6307-27 feet, to open oil production on the structure. The Bois d'Arc section of the Hunton was topped at 6338 feet and on a drill-stem test at 6341-59 feet, oil-cut mud was recovered. Total depth is 6392 feet.

Seminole County: Another productive "pimple" structure has been proven by W. C. McBride, Inc., southwest of the old Sylvian pool. Norvell Royalty 1, NE SW SW 16-10n-7e, found the Gilcrease sand at 3738-52 feet, and from 3768-79 feet, total depth. On a drill-stem test at 3740-79 feet the well showed gas in 5 minutes and oil in 30 minutes. The well flowed for 20 minutes but no estimate of the rate of flow was made. Casing was set at 3740 feet. McBride has started 4 offsets.

Stephens County: The Texas Company was testing Harrell 1-A, SW NW SW 3-1n-5w, at the south end of the Carter-Knox field in the northern part of the county. The well, a possible extension to the area, flowed 4,300,000 cubic feet of gas per day from 5355-73 feet. Total depth is 8447 feet.

Garvin County: The east side of the East Lindsay field apparently has been defined by The Carter Oil Company's Bradshaw 1, CNW SE 4-4n-3w, which was drilled to 9371 feet. Pipe was set at 7926 feet and the well had been perforated and tested for several weeks.

Utah and Georgia Geologic Maps Offered by Survey

A geologic map of the Duchesne River area on the north side of the Uinta Basin, Utah, where oil or gas is held not likely to be found, has been issued by the Geological Survey to show the surface distribution of rocks that may contain oil farther south in the basin.

The map, Preliminary Map 75 of the Oil and Gas Investigations series, will be useful to geologists studying the potentialities of the basin for oil production, survey officials said, pointing out that "dead" oil has been observed in the Weber sandstone, and other possible oil-reservoir rocks are discussed in the accompanying text. Copies are available at 60 cents each from the survey offices in Washington, Salt Lake City, Denver, Tulsa and Casper, Wyo.

Another map just issued by the Survey, Preliminary Map 72 of the series, shows the surface geology of southern Georgia, now being actively prospected, defining the distribution of rock strata of Tertiary and Quaternary age in the Coastal Plain. Copies may be secured at 40 cents each from the Washington office.

• Kansas

Seward County Test Opening Mississippi Lime Gas Pool

Seward County wildcat opening Mississippi gas pool; oil pool opened in Stafford County; Rooks County wildcat assigned 600-barrel potential; oil pool looms in Ellis County.

Seward County: Testing continued at H. L. Hunt's Lofland-Light 1, SW NE 15-35s-32w, southeast of Liberal, and indications are that the well will open gas production from the Mississippi lime formation. The test is near the Kansas-Oklahoma line and a few miles from Hunt's Light 1, CSE SE 9-6n-21eCm, in Oklahoma, which made 6 million cubic feet of gas per day. Mississippi lime was topped at 6174 feet at the Lofland-Light, and pipe was set 2 feet off bottom at 6312 feet. Casing was perforated and acidized in 5 spots between 6175-280 feet.

Stafford County: An oil pool has been opened east of St. John by Musgrove Petroleum Company of Wichita, and associates. Lanterman 1, NW NW NW 23-22s-12w, swabbed 50 barrels of oil per hour for 3 hours on a test of the Arbuckle lime, at 3672-76 feet. Tanks are being erected.

Rooks County: Continental Oil Company's Gilbert 1, NE NE SE 6-9s-18w, 2 miles east of the Barry pool, has been assigned a state potential of 609 bar-

Wells Completed in the United States in Week Ended August 30, 1947

Data preliminary and subject to revision. Revised and more complete data on all completions and exploration shown in monthly summaries published in last issue of each month.

State or District	FIELD COMPLETIONS: New Wells: Oil	Dist.	Gas	*Input	Dry	Total	Old Wells Deepened	EXPLORATORY COMPLETIONS: Oil	Dist.	Gas	Dry	Total	ALL COMPLETIONS: This Week	Last Week	This Week 1946
Arkansas	5				3	8					1	1	9	9	2
California	26		2		2	30	1				6	6	37	31	35
Colorado	4					4					1	1	5	3	4
Florida														1	
Illinois	22				12	34					6	6	40	53	52
Indiana	5				5	10					4	4	14	15	9
Kansas	26		4		9	39					8	8	47	50	35
Kentucky	5				4	9					1	1	10	18	13
Louisiana	19		1		5	25		1	1		5	7	32	33	19
N. Louisiana	11		1		1	13					4	4	17	18	13
S. Louisiana	8				4	12		1	1		1	3	15	15	6
Michigan	8		3		3	14					2	2	16	19	13
Mississippi	5		1		3	9	1				2	2	12	10	2
Montana	3					3					1	1	4	7	6
New Mexico	10		2			12					1	1	13	10	16
New York	12			14	1	27							27	30	25
Ohio	9		12		7	28							28	27	22
Oklahoma	48		5		24	77	2	2			11	13	92	95	65
Pennsylvania	19		13	21	4	57							57	67	50
Texas	93	5	15		34	147	3	2	2	1	25	30	180	190	166
DISTRICTS:															
1—S. Central	5		2		4	11					1	1	12	10	4
2—Middle Gulf	8	2				10					1	1	11	16	[1]
3—Upper Gulf	5		1		3	9					3	3	12	14	17
4—L. Gulf-S.W.	7	2	1		3	13	1	2	2		5	9	23	16	33
5—E. Central			2			2					1	1	3	4	[2]
6—Northeast	1	1	2		2	6					1	1	7	13	9
7-B—N. Central	5				1	6					2	2	8	11	[3]
7-C—W. Central	4					4					1	1	5	9	[4]
8—West	30				2	32	1			1	3	4	37	50	33
9—North	23				19	42	1				6	6	49	38	63
10—Panhandle	5		7			12					1	1	13	9	8
West Virginia	1		9		2	12							12	22	14
Wyoming	3				1	4							4	11	4
Total U.S.	323	5	67	35	119	549	7	5	3	1	74	83	639	701	552

* Includes salt water disposal wells. [1] Middle Gulf included with Lower Gulf-S.W. [2] East Central included with Northeast. [3] North Central included with North. [4] West Central included with West.

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rels of oil per day from the Arbuckle lime, which has not been acidized. The pool has been named Barry East.

Ellis County: Possibility of an oil pool 3½ miles east of the Ellis pool was looming at Continental's King 1, NE NE SW 35-12s-20w. About 60 feet of oil-cut mud was recovered on a drill-stem test of the Arbuckle lime at 3884-924 feet.

• New Mexico

Lea County Test Indicates Oil Production from Yeso

Lea County semi-wildcat indicates commercial oil production from the Yeso. Second prolific Simpson-pay well listed for Brunson field.

Lea County: Stanolind Oil & Gas Company's Southland Royalty Company 1, C SW NE 9-21s-37e, 1¼ miles north of the Drinkard (Yeso) pay area that extends 10 miles northwest-southeast across several old fields, recovered 5000 feet of oil and 100 feet of oil- and gas-cut mud when tester was used in the Yeso (Clear Fork) at 6530-662 feet. This outpost will drill ahead to determine the thickness of the pay before running pipe for completion. The favorable structural position points up the possibility of the field extending some distance north. Stanolind, Continental Oil Company et al, and Gulf Oil Corporation hold leases on the intermediate acreage.

Magnolia Petroelum Company's Corrigan 7, near C SE SE 33-21s-37e east edge of the Ellenburger sector of the Brunson field, flowed 324 barrels of 41.5-gravity oil, with gas-oil ratio of 2408/1, on potential test through ¼-inch choke from Simpson perforations at 7430-40 feet. The zone was acidized with 1000 gallons. Only a portion of the effective was included in the perforations, as the well flowed 29 barrels in 1½ hours through tester at 7343-7400 feet, and second test at 7400-46 feet resulted in flow of 50 barrels of oil in 1 hour through tester. Corrigan 7 is about a mile east by south of the initial Simpson zone producer for the county.

• West Texas

Ector County Wildcat Has Shallow Ellenburger Flow

Ector County wildcat registers big flow from comparatively shallow Ellenburger; Crane County lists flowing discovery from the Glorietta, and McKnight area extended by plugged-back well

Ector County: Phillips Petroleum Company and The Texas Company's Cowden-McEntire 1, C NE NE T&P 18, Block 44, T-1-N, wildcat between the Andector and Goldsmith-Clear Fork fields, entered Ellenburger at 8060 feet, with elevation 3203 feet, and at 8133 feet flowed 102 barrels of oil through tester in 50 minutes. A second test of the zone at 8131-80 feet failed to develop flowing production, but the recovery was 100 feet of oil- and gas-cut mud; 6320 feet of clean oil, and 540 feet of oil- and gas-cut mud without evidence of water. The well will be deepened 50 feet for another test before running pipe.

This strike is 2 miles southeast of nearest Ellenburger production in the Andector field, and top of Ellenburger correlates 354 feet high to the nearest producer. It is a mile south by east of a 8967-foot Ellenburger failure that correlates 625 feet low, while it is 2½ miles north by east and 910 feet higher on structure than an Ellenburger failure in the Goldsmith-Clear Fork area. Cowden-McEntire 1 passed up flowing production from the 6200-foot Clear Fork, and showed possible oil production from the Wichita-Albany at 7360-7455 feet.

Phillips' TXL 1-P, C SW SE T&P 29, Block 45, T-1-N, ¾ mile northwest of the Ellenburger producing sector of the TXL field, and a mile northeast of Devonian production, will not drill to the Ellenburger as originally planned due to unfavorable structural position. Drilling was halted at 8435 feet in barren Silurian to cement 5½-inch pipe at 7905 feet to try for completion in the Devonian, topped at 7891 feet with elevation 3347 feet. Top of Devonian correlates 54 feet low to nearest Ellenburger well and 23 feet high to nearest Devonian well. This outpost does not prevent major extensions being given the Ellenburger zone in a more northerly trend, and possibly bypassing the outpost on the east.

Crane County: The Texas Company's Connell 31, C NW SW PSL 29, Block B-16, 2⅜ miles west by south of the Jordan 2-pay field, nearest production, established new Glorietta lime pay field in flowing 299 barrels of 34.2-gravity oil, with 1 percent clear water, on official gauge through 1-inch choke after using 1000 gallons of acid through perforations at 4660-85 feet. Back pressure on tubing varied from 40 to 80 pounds, while the gas-oil ratio was 667/1. This wildcat was plugged back from barren Ellenburger at 9805-964 feet.

Gulf Oil Corporation's Waddell et al 11, SEc PSL 20, Block B-21, originally completed in 1939 at 4680 feet as an outpost producer for the Sand Hills field, pumped 53 barrels of 34.4-gravity oil and 3 barrels of water initial when plugged back to 3475 feet for completion in the McKnight zone. It is 1¾ miles south by east of production in this upper pay.

Yates Field: Stanolind Oil & Gas Company's Smith 46-B, T. C. Ry. 104, and near the northeast edge of the lime-pay area, blew out at 482 feet for rated flow of 100 barrels of oil and water hourly at 482 feet. The flow was mudded off and pipe landed at 353 feet to complete in the so-called Tobarg pay.

Gulf's Thompson 11-TO, I&GN Ry. 71, Block 1, Crockett County and on the extreme east edge of the regular-pay area, flowed 267.58 barrels of 27.1-gravity oil on 35-minute gauge from open hole at 251-264 feet. Such unusually prolific flow at shallow depth is attributed to migratory oil from regular-pay wells that have developed defective casing. Operators have been active for months in checking every well for possible under-ground leakage, and a new inside string of pipe is run wherever this condition is confirmed.

Pending Strikes: The Pure Oil Company and Humble Oil & Refining Company's Cowden 1, indicated Ellenburger-pay discovery for the north end of the Dollar Hide field, was drilling plugs from 7-inch at 9975 feet, with the hole bottomed in pay at 10,003 feet. It will deepen before attempting completion. In Ector County, Humble's Yarbrough-

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Allen 1, Ellenburger discovery, was preparing to take official potential after deepening to 10,620 feet, or 125 feet in the Ellenburger. Plymouth Oil Company's Frost 1, Sterling County discovery from Ellenburger, squeezed cement opposite the Mississippian zone to exclude water, prior to taking official gauge through perforations at 8356-76 feet. In Crockett County, Byrd & Frost, Inc. and Gulf's Mayberry 1, which passed up prolific flow of gas and an underlying oil and gas zone, was drilling shale and sand at 6947 feet.

Ward County: Shell Oil Company's Sealy-Smith 21, NE NW G&MMB&A 22, Block A, southeast outpost for the Monahans-Ellenburger 7-well area, was deepening to establish the water level in barren Ellenburger, topped at 10,463 feet, with elevation 2744 feet. Four drillstem tests of the Ellenburger at intervals to 10,506 feet proved dry. This outpost recorded structural dip in the Devonian, and increased the dip to 364 feet upon reaching its objective. The 2 nearest Ellenburger wells are the highest in the field.

• North Texas

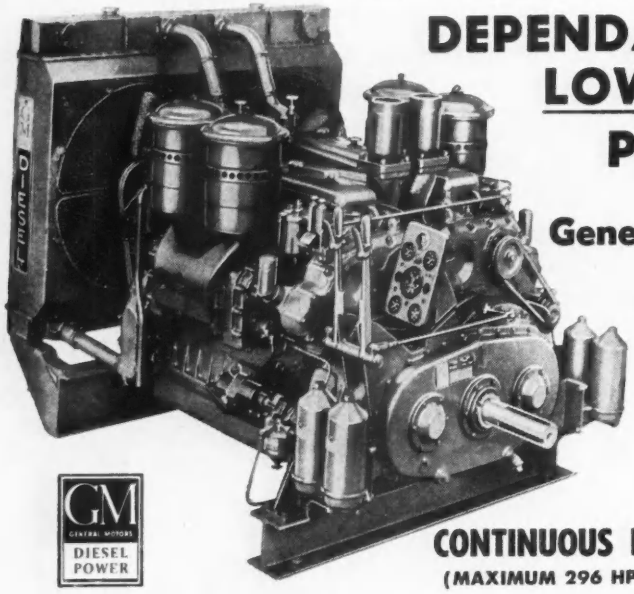
Throckmorton County Wildcat Has Flow from Mississippi

Throckmorton County wildcat has natural flow from Mississippi; Ellenburger discovery in Denton County is a small pumper; Mississippi production to cover considerable area in Kendall field.

Throckmorton County: Jas. H. Snowden et al's Howsley 1, NW SE BBB &C Ry. 300 and 2 miles northeast of Bend production, flowed 101 barrels of oil natural on 3 hour preliminary gauge through ½-inch choke from open hole at 4674-4719 feet in Mississippi, topped at 4664 feet with elevation 1315 feet. This discovery passed up prolific oil flow in the 4100-foot bend, and also in the 4500-foot Marble Falls. Howsley 2 was being started as a twin test to explore the Bend. Owners control the area with a large lease block.

Denton County: The Texas Company's Saunders 1, John Ayers Survey A-2, and 9 miles southeast of the Bolivar pool, pumped 5½ barrels of oil and 54 barrels of water during first 16 hours from perforations at 2405-13 feet in Ellenburger, topped at 2350 feet with elevation 684 feet.

Young County: Warren Petroleum Corporation's Kendall 5, offsetting Bend production in the original sector of the Kendall field and a southeast diagonal offset to a Mississippi producer, was drilling plugs from casing to complete from porous lime at 4579-86 feet. The Mississippi was entered at 4560 feet, with elevation 1276 feet, correlating 22 feet high to the oil-pay discovery for this zone. Kendall 5 logged barren lime in the top 19 feet of the Mississippian, and the remainder of the section showed an unusual volume of gas.



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Quarterly's 1946 Review of Petroleum Geology Available

The "Review of Petroleum Geology in 1946" is now available for distribution as Vol. 42, No. 3, of the *Quarterly* of the Colorado School of Mines, H. M. Crain, director of publications at the school, has announced. This is the fifth such review published annually in the *Quarterly* in cooperation with the American Association of Petroleum Geologists.

The authors are Dr. F. M. Van Tuyl and Professor W. S. Levings of the department of geology with contributions by members of the faculty of the departments of geology, geophysics, and petroleum engineering. Both American and foreign geologists, geo-physicists, and petroleum engineers also have contributed to the review, so that both the domestic and foreign fields are more broadly and authoritatively treated than in previous reviews.

It is based on information compiled from the literature and from a canvass of leading geologists, geophysicists, and petroleum engineers in the U. S. and foreign countries. Covered are important events of the year, advances in petroleum geology and contributory fields, including developments in training of geologists and geophysicists, progress in the developments of geophysics and geochemistry, developments in petroleum engineering, aerial photographs, new and improved techniques, world exploration and development, production and reserves, trends in petroleum geology and geophysics, and the future of the petroleum industry.

The publication comprises 316 pages and includes a bibliography of about 3000 listings. The review may be obtained from the department of publications, Colorado School of Mines, Golden, at $2.50 a copy postpaid.

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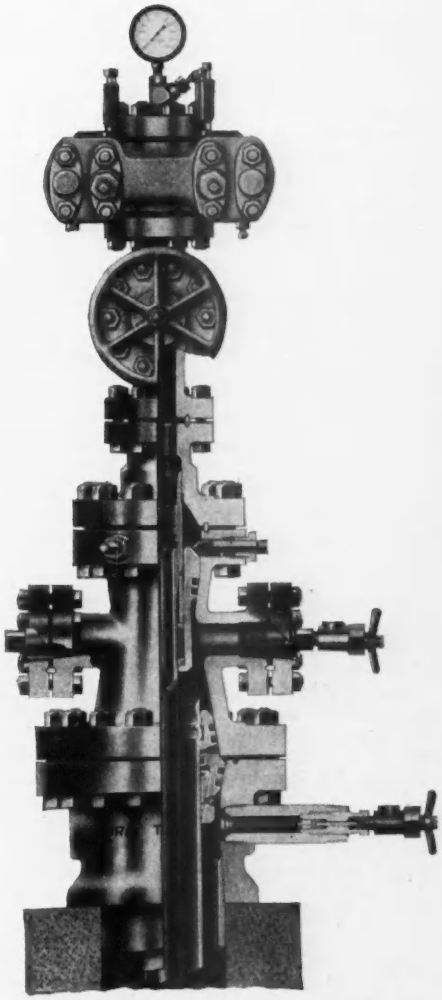

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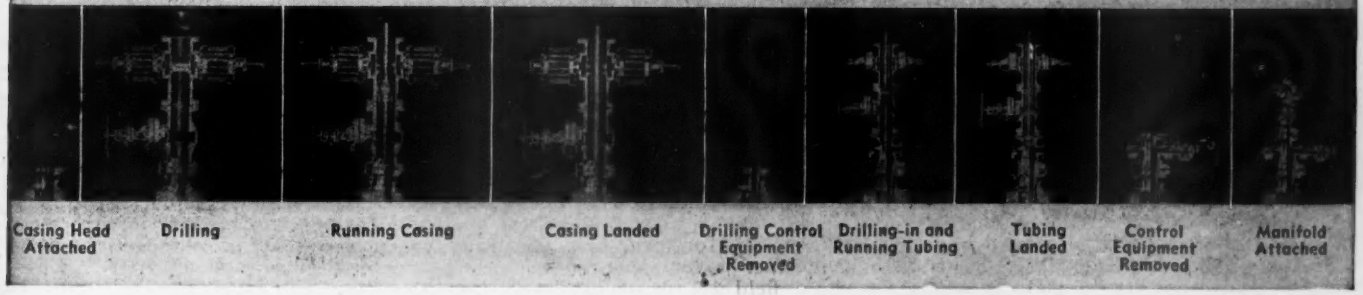

• East Texas

Hopkins Wildcat Shows for Sub-Clarksville Discovery

Hopkins County wildcat shows for oil discovery in sub-Clarksville sand, with large producing area indicated; Blackfoot prospect boosts its natural flow from Pettit; Fairfield outpost makes gas from Pettit; Rodessa zone yields water on north end of Cayuga field.

Hopkins County: Delta Drilling Company's Coker 1, Nacogdoches University league 18 and 3½ miles southeast of Reilly Springs, is showing for a sub-Clarksville sand discovery. Pipe was set after a drill-stem test at 4120-210 feet yielded 90 feet of oil-cut mud and 630 feet of oil, testing 20 to 24 gravity. This strike is about ¼ mile southeast of Delta's Livingston 1, Travis Peak failure at 8642 feet that indicated oil production in the sub-Clarksville at 4026-44 feet. Coker 1 logged base of Austin Chalk at 3913 feet, with elevation of 429 feet, correlating 44 feet low, and sand at 3962-88 feet contained unusually low-gravity oil. Completion will be made opposite second oil zone at 4152-60 feet. The well is on one of a group of leases assigned to Delta by The Pure Oil Company for development to the top of the Woodbine with the latter retaining ⅛ override.

Anderson County: Sanders and Murchison's Broadway 1, discovery for the Blackfoot prospect, increased its flow to 232 barrels of 44-gravity oil natural on 11-hour test through ⅜ inch choke with 1650 pounds back pressure on tubing. This production is from Pettit perforations at 9736½-58½ feet, having plugged back from Travis Peak at 10,187 feet. No attempt will be made to determine the producing value of indicated oil flow passed up in the Rodessa at 8956-71 feet.

Freestone County: The Texas Company's Irwin 1, Frances O'Neal survey and a mile southwest of Pettit gas production in the Fairfield area, was rated at 2 million cubic feet of gas daily on natural test through ¼-inch choke from perforations at 8132-46 feet in Pettit, topped at 8060 feet with elevation of 549 feet. The zone was treated with 3000 gallons of acid, and production test was pending.

Humble Oil & Refining Company's McWatters 1, projected Cotton Valley test for the Freestone geophysical prospect, cemented 9-inch protection string at 5098 feet in Georgetown, topped at 5060 feet, with elevation 489 feet.

Henderson County: Sun Oil Company's Watkins 4, north edge of the Woodbine producing sector of the Cayuga field, was abandoned after testing water in the Upper Rodessa at 7373-7765 feet.

Smith County: Chapel Hill Gas System's Rayford 1, Thos. Payne Survey, was showing for the first Travis Peak producer in the Chapel Hill field, in testing 1,200,000 cubic feet of gas with spray of 55-gravity distillate daily through 11/32-inch choke. This production is from 6 zones of perforations between 8100 feet and 8308 feet. The Travis Peak was entered at 8075 feet.

Harrison County: E. C. Johnston's Edna Hood 1, Lucinda Wallace Survey, 12 miles east of Marshall, deepened from 6475 to 6566 feet to explore deeper Travis Peak sands, was testing gas, estimated at 1 million cubic feet a day. No official report has been released.

Stanolind Oil & Gas Company's George Slaughter 1, J. E. White Survey, 9 miles north of Marshall, went to 10,374 feet in the Cotton Valley, short of its Smackover lime objective by several hundred feet, and plugged back to 6900 feet to test the Travis Peak. Some gas-distillate shows in the Pettit also may be tested.

Shelby County: Humble Oil & Refining Company's Elzie Fleming 1, John Hailey Survey, Huxley field went to total depth of 7450 feet. A test of perforations at 5558-68 feet recovered only salt water. Perforations were squeezed and operators are now waiting on cement.

Oil Man Buys Ranch

O. W. Killam of Laredo, Texas, last week announced the purchase of the 80,000-acre Ortiz ranch, near Laredo. Price was estimated at $600,000. He said his primary interest in the ranch is its oil possibilities. Killam discovered the Mirando Valley field in Zepata County, Texas, in 1921 and a year later opened the Schott field in Webb County.

Texas Lets Contract

Texas Pipe Line Company has awarded a contract to Vilbig Construction Company, Dallas, for the building of tank grades and levees for ten 122,-700-barrel tanks and other grading operations at the company's East Houston tank farm.

Trucking Permit Granted

Rogers Cartage Company, Chicago, was authorized by the Interstate Commerce Commission, with Commissioner Lee dissenting, to haul petroleum products in tank trucks. Specifically, the company is authorized to haul from Kankakee and West Kankakee to points in Indiana and north of U. S. Highway 40; from points in the Chicago commercial area to points in Wisconsin; and from Cahokia, Roxana, Wood River, and East St. Louis, Ill., to points in Missouri. Lee's dissent agreed with protests of railroads and other motor carriers, who asserted that present facilities are adequate.

• South Central Texas

Wildcat West of Poteet Has Oil Show in Navarro Sand

Wildcat west of Poteet has oil show in Navarro sand; potential run on Kirkwood & Morgan's Atascosa County discovery; new wildcat located south of Fredricksburg.

Atascosa County: Pegg Brothers' Oscar Brooks 1, wildcat 9 miles west of Poteet and a mile southwest of Rossville, had sands with oil odor at 2387-2427 feet in the Navarro and was making production tests. Sandy shale with oil odor was logged at 2427-41 feet. This wildcat is 660 feet east of H. S. Stahl's Pratt 1 dry hole, which tested salt water at 2373-405 feet. Pegg Brothers' Pratt 1, a dry hole 200 feet west of the Stahl well, swabbed 10 barrels of 49-gravity oil plus salt water daily from open hole at 2371-402 feet.

Kirkwood & Morgan's Marrs McLean 1, has either extended production at Charlotte field 1½ miles southwest or discovered a new Navarro sand field. On potential the well flowed 126½ barrels of 35.2-gravity oil daily on 3/16-inch choke with tubing pressure 400 pounds, casing pressure 750 pounds, and gas-oil ratio 326-1. Total depth is 5236 feet with 5½-inch casing set to 5176 feet and perforated at 5161-67 feet for completion.

Gillespie County: A new wildcat 6 miles south of Fredricksburg is B. L. Raborn's E. & G. Lochte 1, a 1000-foot cable tool test.

• Middle Texas Coast

Albert West, Oakville-Wilcox Area Outpost Has Oil in Slick

Outpost northeast of Albert West field and southwest of Oakville-Wilcox field tests oil in Slick sand; outpost on the east side of Burnell-Wilcox field completed as oiler; Roche field extended a mile northeast; Boyce field outpost tests oil in the Pettus; La Gloria field southeast flank outpost makes condensate on test.

Live Oak County: Continental Oil Company's Albert West 2-B, outpost 1 mile northeast of Albert West field and 1½ miles southwest of Oakville-Wilcox field, has tested oil in the Slick sand. A drill-stem test at 6741-47 feet, using ¼-inch chokes and 1500 feet of water cushion, developed 560 pounds working pressure in 9 minutes and recovered the cushion and 1 stand of oil-cut mud. Another test at 6747-55 feet, using ¼-inch chokes and 1500 feet of water cushion, developed 60 pounds working pressure in 30 minutes and recovered the cushion and 2780 feet of oil and 100 feet of salt water. Another test at 6755-63 feet recovered 1500 feet of water cushion, 3770 feet of salt water and 550 feet of gas-cut mud. The pay zone in this well is at about the same level at which the Slick sand produces in the Albert West and Oakville-Wilcox fields and may be a link.

Karnes County: Stanolind Oil & Gas Company's Ruth Powell 1, outpost on the east side of Burnell-Wilcox field, has been completed as an oil well. The well gauged 44 barrels of 35.6-gravity oil daily on potential. Total depth is 6824 feet with the pay topped at 6772 feet.

Refugio County: Roche field has been extended a mile northeast by Hewit & Dougherty's F. B. Rooke and Sons 1-E. On potential the well flowed 118 barrels of 38.9-gravity oil daily on 7/64-inch choke with gas-oil ratio 585/1, tubing pressure 1070 pounds, and casing pressure 1100 pounds. Total depth is 6842 feet with casing perforated in the Frio at 6831-42 feet for completion.

Goliad County: At Boyce field, The Atlantic Refining Company's A. M. Olbrecht 1, outpost ⅔ mile west of Oil production and ½ mile northeast of gas-condensate production, has tested oil in the Pettus sand. A drill-stem test at 4249-63 feet, using ¼-inch chokes top and bottom, developed 330 pounds working pressure in 5 minutes and recovered 1½ gallons of amber condensate. Another test at 4270-83 feet, using ¼-inch chokes, developed 44 pounds working pressure in 3 minutes, but packer failed, and on pulling the tool a recovery was made of 360 feet of oil-cut mud and 100 feet of 48-gravity oil. Bottom hole pressure was 1050 pounds flowing. Following

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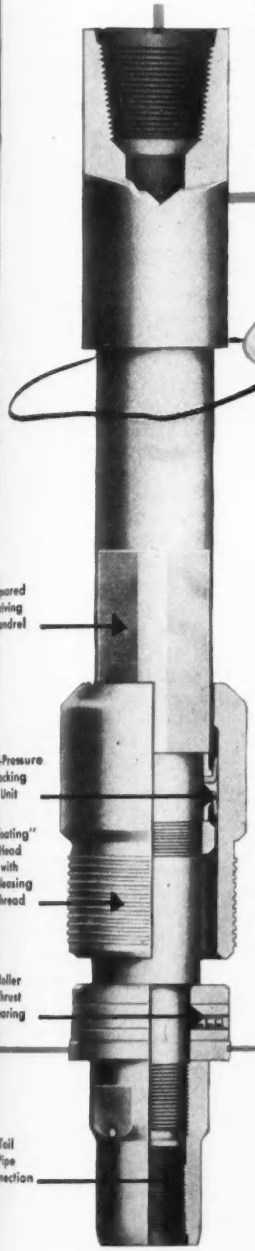

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The Baash-Ross Security Left Hand Releasing Tool not only simplifies liner and packer setting operations, but also facilitates washing and cementing operations run at the same time. The "floating head" is packed off to withstand high fluid pressures, preventing leakage at this point . . . and threads are provided for attaching any length of tail pipe to the bottom of the tool for spotting cement or washing action. No packer of any kind is needed on the tail pipe.

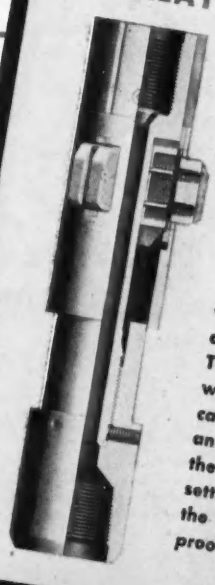
WIDE RANGE OF ACCESSORY EQUIPMENT

Many types of accessories are available for use with the Baash-Ross Security Releasing Tool—and also for use with the Delayed Action device. In all of these tools a special shoulder is provided for supporting the thrust bearing, and the connecting thread mates with that of the Releasing Tool In Delayed Action devices a special setting sleeve, actuated by the expanded lugs, is incorporated. Accessories include . . .

- **Adapters.** Plain, Regular Packing and Delayed Action Packing Types . . . plus a Regular Action Type with releasable hold down slips for pressure conditions. For all casing sizes 4¾" thru 13⅜".
- **Liner Hangers.** Plain, Regular Packing and Delayed Action Packing Types . . . plus a type with releasable hold down slips. For all casing sizes 4¾" thru 13⅜".

. . . and other accessories.

DELAYED ACTION ATTACHMENT HAS MANY USES



The Baash-Ross Security Delayed Action Packer Setting Tool attaches to the bottom of the Releasing Tool to give positive protection against prematurely setting packing elements on Delayed Action Adapters, Liner Hangers and Casing Packers. Lugs remain retracted within the walls of the Setting Tool until after all washing, cementing and other operations are completed. Then, after releasing, the Tool is lifted above the packing device, whereupon the lugs expand automatically. The run-in string is then lowered and as the lugs seat against the top of the packer the applied weight forces the setting sleeve downward and expands the packing. *It's simple, positive, fool-proof in its operation!*

SEE YOUR NEAREST BAASH-ROSS REPRESENTATIVE FOR COMPLETE DETAILS . . . OR WRITE DIRECT

this test hole was drilled ahead and presently is below 4900 feet.

Brooks County: Magnolia Petroleum Company's Lohmann 1, southeast flank outpost at La Gloria field, gauged 43 barrels of condensate, 12 barrels of water and 3 million cubic feet of gas daily on initial test. Flow was through 5/16-inch choke with 1395 pounds working pressure. This test was made through perforations at 8795-8828 feet.

• Southwest Texas—Lower Coast

Potential Run on Discovery Southwest of Hoffman Field

Potential given oil discovery southwest of Hoffman field; Piedras Pintas dome outpost being completed as oil well; production tests being made in outpost south of Richard field; Blucher field northeast outpost prepares to make dual completion; wildcat east of Boyle field completed as dry gasser.

Duval County: Potential test has been run at Cox & Hamon and George Coates' J. R. Dougherty 1-A, oil discovery 1½ miles southwest of Hoffman field and 3½ miles east of East Peters field. The well gauged 23 barrels of 22-gravity oil daily on pump from perforations at 2278-80 feet. Gas-oil ratio was 160/1 with no water in the production. Total depth is 2317 feet and top of the pay sand is 2276 feet. Casing has been set in the same operators' J. R. Dougherty 2-A, 660 feet southwest of the No. 1-A discovery, and production tests were under way.

On the east flank of Piedras Pintas dome, H. H. Howell's Magnolia Petroleum Company 1, outpost ½ mile northwest of oil production, tested oil and was waiting on potential gauge. Total depth is 3598 feet with 5½-inch casing set to 3012 feet and perforated just above the 3000-foot level for completion. No gauge of production has been released.

Production tests were being made in V. G. Schimmel's Leopolde Lopez et al 2, outpost ½ mile south of Richard field production. On initial test the well made wash water and a little oil while cleaning through open 2-inch tubing. Casing was perforated at 1788-1803 feet for the test. Total depth is 1804 feet with 5½-inch casing set on bottom.

Jim Wells County: Blanco Oil Company and A. A. Buchanan's Conran Blucher et al 1, outpost ¾ mile northeast of Blucher field, prepared to make dual completion in sands at the 7200- and 7440-foot levels. Prior to setting casing a drill-stem test at 7203-07 feet developed 335 pounds working pressure in 20 minutes and recovered 670 feet of oil and 10 feet of mud. Bottom hole pressure was 3500 pounds open and 3600 pounds closed. Another test at 7442-49 feet, using 1500-foot water cushion, developed 200 pounds working pressure and recovered 900 feet of oil and 180 feet of mud and water cushion, all in 21 minutes. Bottom hole pressure was 2900 pounds open and 4200 pounds closed.

Starr County: Selby-Walker Corporation's Garcia 1, wildcat east of Boyle field, has been completed as a dry gasser. On ⅛-inch choke the well flowed gas with 825 pounds flowing pressure on the tubing and shutin pressure of 1600 pounds. Total depth is 4008 feet with 5-inch casing set to 3472 feet.

• Upper Texas Coast

Production on West Columbia Field Flank Is Confirmed

Deep production on north flank of West Columbia field confirmed; production tests made in Security area wildcat; Hutchins field outpost given potential; new producer at Midfields finaled.

Brazoria County: New deep sand production on the north flank of West Columbia field has been confirmed by The Texas Company's J. G. Phillips 28, located 550 feet west of the Phillips 27, discovery of new deep sand production in this area. On potential the well flowed 182 barrels of 28.2-gravity oil daily through 9/64-inch choke with 850 pounds flowing pressure on tubing and gas-oil ratio of 645/1. Total depth is 7784 feet with 7-inch casing set to 7055 feet and perforated at 6666-75 feet for completion. Phillips 27 was completed in May from perforations at 6633-40 feet.

San Jacinto County: The Atlantic Refining Company's R. L. White 1, wildcat in the Security area of Mary Rucker Survey A-259, was making production tests. Total depth is 10,506 feet with 5½-inch casing set to 8854 feet. Initial perforations were made at 8708-12 feet with details not released. This wildcat is 4 miles south of Mercy field production.

Wharton County: Adams & Haggarty's J. A. Wright 1, outpost on the southeast side of Hutchins field production, has been given potential test. The well gauged 105 barrels of 24.1-gravity oil daily through ⅛-inch choke with 500 pounds flowing pressure on tubing and gas-oil ratio of 346/1. Total depth is 4675 feet with pay sand topped at 4658 feet.

Matagorda County: A new producer at Midfields field is Sun Oil Company's Stovall-Johnston 1-B, 1171 feet east of Jenson 1 and in I&GN Survey, Block 5. On potential the well flowed 126 barrels of 42.3-gravity oil daily through 6/64-inch choke with 2020 pounds pressure on the tubing and gas-oil ratio 1453/1. Total depth is 9176 feet with casing perforated at 9124-34 feet for completion.

• South Louisiana

Cores Made Below 14,000 Feet in Four Isle Test

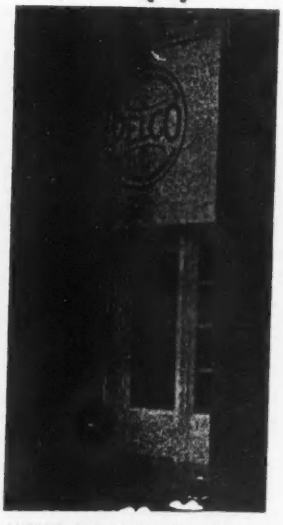
Cores taken below 14,000 feet in Four Isle test; confirmation completed at Tigre Lagoon; surface pipe set in offshore test; water and oil tested in East Cameron wildcat.

Terrebonne Parish: The Superior Oil Company of California was reported coring in possible oil sands below 14,028 feet in the company's State LLE 2, Unit 12, semi-wildcat in 24-21s-16e, Four Isle dome. A log to 14,028 feet indicated possible sands, and 7-inch casing was set at this depth. Cement plug has been drilled and a core barrel run back in the hole. Latest coring depth was reported at 14,032 feet. Protection pipe previously was set at 10,920 feet.

Vermilion Parish: Union Oil Company of California's Beilleaud-Planters 1, confirmation wildcat extension in the Tigre Lagoon discovery area, 32-13s-5e, tested gas through 9/64-inch choke from 51 perforations made at 11,638-655 feet. Flowing pressure during the drill-stem test gauged 4000 pounds. Total depth was 12,229 feet with 5½-inch pipe set

Political Clowning

Beginning this month a Committee of Congress, headed by Senator Taft, will look into the high cost of living. After which the Department of Justice will do a bit of trust busting. Political clowning is often better than Barnum. Taft knows that incomes, along with prices, have doubled, and the Justice Department knows that anti-trust laws do not apply to unions and government price support policies. Nor is Congress or the Justice Department ignorant of the fact that Supply & Demand, unless impeded by something more than "trusts," always govern prices.



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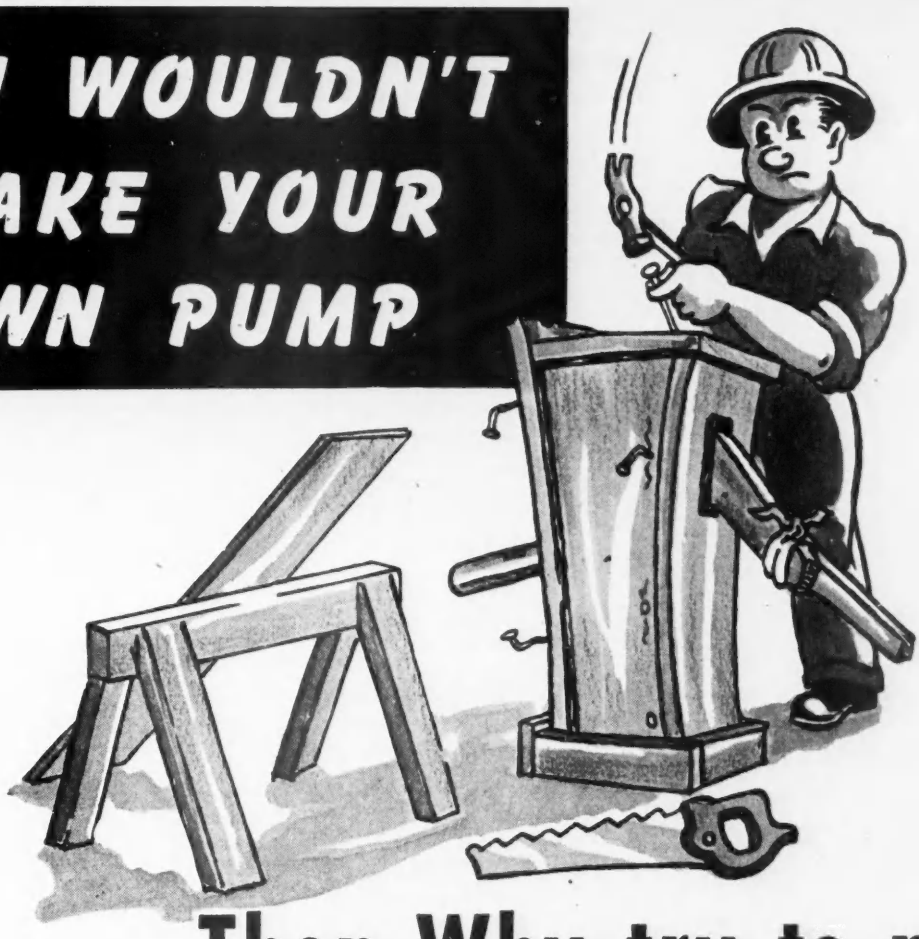

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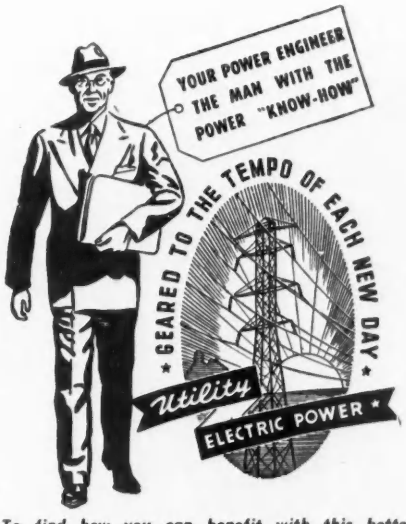

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to 12,033 feet. This producing section is reported to be a new sand for gas production. The discovery, Landry 1, completed in April, produces from 11,480-500 feet, with bottom at 11,843 feet.

Off the coast of Vermilion Parish and 19 miles out in the Gulf of Mexico, 13⅜-inch surface pipe has been cemented to 2530 feet in Superior's Gulf of Mexico 1-A, State lease 884, Block 71, Vermilion area. Projected depth is 12,000 feet.

Cameron Parish: The Texas Company's Miami Corporation 4, wildcat in the East Cameron prospect, 13-14s-12w, about 4½ miles northwest of the Mud Lake gas and condensate field, tested oil and salt water. The well flowed 169 barrels of fluid, 84 percent of which was salt water, from perforations at 5528-34 feet. Total depth of the hole was 11,669 feet, plugged back to 5575 feet.

• North Louisiana

Deeper Pay Believed Found In DeSoto's Kickapoo Field

Long-sought deeper pay believed found at Kickapoo field; Logansport deep test closely watched; wildcat locations and pending deals indicate very active program for last quarter of year.

DeSoto Parish: Initial tests are starting at E. C. Laster et al's Alice D. Witherspoon 1, C SW SE NW 3-14n-14w, Kickapoo field, which has indicated gas and distillate production from the Gloyd horizon of the Rodessa. The well cleaned into pits after pay was perforated from 5254-66 feet. It was later treated with 2000 gallons of acid and closed in while tanks and separator were erected. Production has been sought from the 4000-foot level several times but all tests were unsuccessful; these may now be deepened to the Rodessa.

Stanolind Oil & Gas Company is planning a 4200-foot test, W. Harris 1, NW SE NW 19-14n-14w, near F. A. Callery's Strauss 1, completed several months ago as a small pumper.

Skelly Oil Company's Thelma Nash 1, SW NE 20-12n-16w, on the flank of the Logansport gas field, is being watched with considerable interest. The well was drilling at 10,245 feet but had not yet entered the Cotton Valley section.

Bienville Parish: The Texas Company's wildcat W. A. Givens 1, C SW SW 25-16n-9w, is drilling below 6473 feet in shale and lime, believed to be in the Travis Peak.

Franklin Parish: H. L. Hunt was building derrick for Kincaid 1, C SE NW 19-12n-7e, as a basal Tuscaloosa test which should go to 7500 feet. Hunt was readying 2 other wildcats in La Salle and Catahoula parishes. Three wildcats have been staked in Concordia, Morehouse and Natchitoches parishes, indicating that the last quarter of 1947 may see the most active wildcatting campaign in North Louisiana's history.

Mississippi Production Up

For the first time in its oil history Mississippi attained a daily average production of 100,000 barrels in July. During that month 3,134,343 barrels of oil and condensate were produced for a total severance tax collection of $302,898.53. The daily average production was 101,108 barrels. Total accumulated severance tax collections for the 41-month period was $5,739,758.21.

• Arkansas

Prospective Wesson Field Extensioner Runs Casing

Prospective Wesson extension running casing to make tests; wildcat drilling continues active during week.

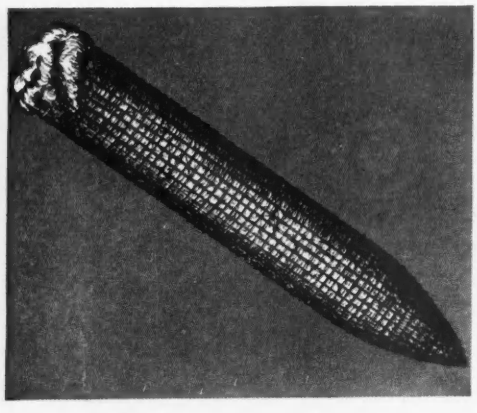
Ouachita County: T. W. Lee and R. W. Burnett were running casing at E. H. Morgan 1, C NE SW SW 27-15s-19w, which logged possible pay section in the "Hogg" sand at 2068-3105 feet in drilling to total depth of 3142 feet. Prospects appeared good for 1½-mile extension of the Wesson field. Ormond Corporation, McAlester Fuel Company and Root Petroleum Corporation plan to stake location in the area in event the outpost is successfully completed. Production at Wesson is from Nacatoch through the Travis Peak horizon. This area has highlighted development in the state in the past few months.

Ashley County: Southern Production Company and The Chicago Corporation's wildcat M. R. Morris 1, C NE NE 31-18s-4w, which topped the Wilcox at 1500 feet, is drilling below 3533 feet.

Chicot County: Basin Oil Company's Joe Dandle, 1, C NE 17-18s-1w, wildcat 2 miles east of Eudora, topped Wilcox at 1670 feet and Gas Rock at 3070 feet. It is now drilling without shows below 3552 feet.

Lafayette County: Barnsdall Oil Company and Spartan Drilling Company's wildcat, Bodcaw Oil Company 1, C SE SW 8-18s-23w, 2 miles south of McKamie field, is drilling without shows below 5891 feet.

Little River County: Frank and George Frankel's wildcat Pearl Witherspoon 1, C SE NW SE 21-12s-30w, is drilling in sand and shale below 3325 feet.



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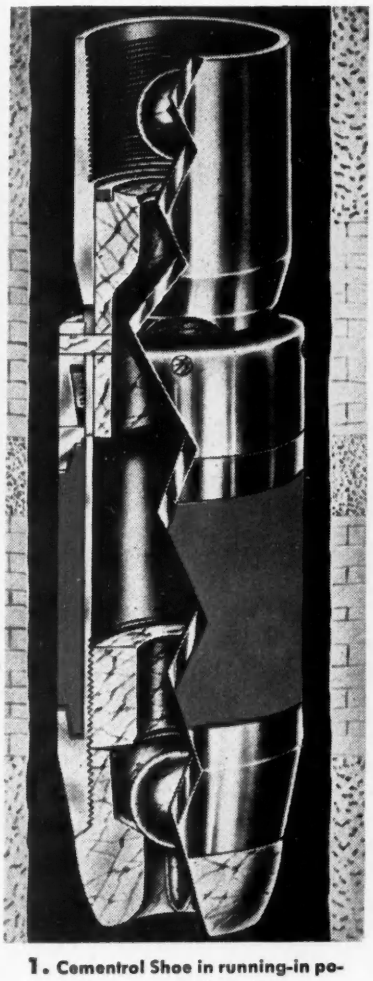
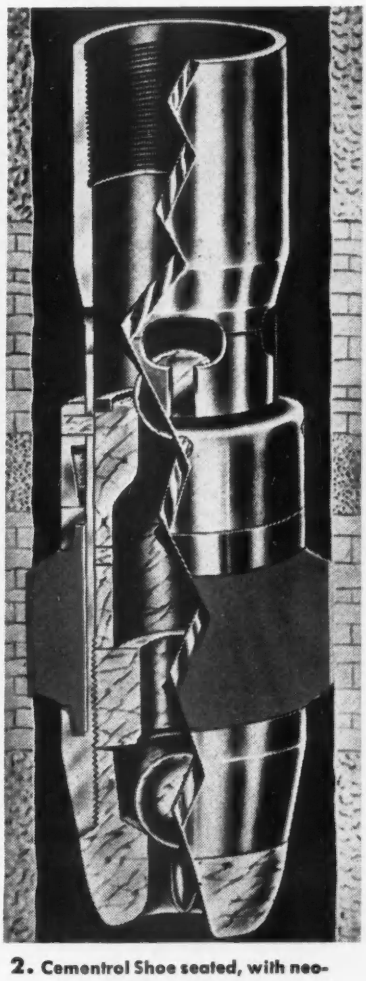


1. Cementrol Shoe in running-in position, with packing element unexpanded.



2. Cementrol Shoe seated, with neoprene packing element expanded against walls of hole.

3. Neoprene parts shown in red.

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• Mississippi

Heidelberg Test Cores After Finding Shows in Cretaceous

Heidelberg field deep test shows promise; Amite County prospect quits; Lincoln County well deepened to Tuscaloosa.

Jasper County: Danciger Oil & Refining Company's C. J. Simmons 1, NEc 36-1n-12e, which has been drilled approximately 4000 feet below present productive levels in the East Heidelberg field, continued with core tests after finding encouragement in Lower Cretaceous sections. Sand sections at 8927-43 and 9194-210 feet developed shows of heavy oil. with well bottomed temporarily at 9289 feet, electrical log has been run.

Amite County: Gulf Refining Company's J. A. Rowland Trustee "A"2, wildcat in 29-4n-2e, has been abandoned at 11,578 feet. There were no shows at any point.

Lincoln County: The California Company's Granberry Smith, NWc 33-8n-7e, Brookhaven field, originally abandoned at 7422 feet, has been successfully deepend to the field's present reservoir in the Tuscaloosa zone. Initial flow was 257 barrels of oil per day from perforations at 10,354-72 and 10,408-17 feet. In the Mallalieu field, Lion Oil Company's T. E. Sutton 1, NE NE 13-6n-7e, is drilling below 350 feet in an effort to extend the field ¾ mile west. C. H. Osmond's Grady Jordan 1, NW NE 29-6n-8e, another extension attempt in Mallalieu, is undertaking to establish production after acidizing. Salt water input was successfully eliminated and a section at 10,480-88 feet was treated with acid. On subsequent swab, water, oil and mud were recovered with a flow of approximately 2 barrels an hour. The well finally died and was being put on the pump. On the eastern extremity of the field Crescent Drilling Company's Luna Mae Minton 1, NWc 14-6n-8e, was rigging up for an attempt to extend the field.

Franklin County: J. C. Hawkins' Lehmann 1, NEc 27-7n-2e, Massive sand test, is drilling below 9850 feet after topping chalk at 8760 feet. The well, which is located east of the Cranfield field, should encounter potential productive zones at approximately 10,000 feet. No shows have been noted.

Jones County: Union Sulphur Company's Earline Parker 1, NEc 31-10n-10w, was undertaking to swab in production after acid job. Eutaw was perforated at 5438-46 feet and the well swabbed heavy oil and salty water. Subsequently, it was perforated at 5450-55 feet with 50 shots and pumped fair amounts of 10.8-gravity oil. The section was then acidized with 1000 gallons, but the well was swabbing acid water with no reports of oil. Gulf Refining Company's L. L. Majors 1, SEc NE 29-6n-11w, in the southern part of the county, which looks like it might make a producer, has recovered salt in cores at 13,-152-57. Previously, cores at 13,151-152 feet developed black shaly sand with slight oil odor. Casing has been set to 13,157 feet. Union Sulphur's A. E. Fall, Estate 1, NWc 8-9n-10w, was preparing for a drill-stem test after running 5½-inch casing to 5456 feet. The Eutaw and Tuscaloosa section were extensively cored at 5463-7187 feet, but no shows were developed. H. E. Williams State 1, 16-7n-11w, is drilling below 6500 feet after topping chalk at 5622 feet. No shows have been reported.

Yazoo County: J. R. Frankel's Eisner Estate 1, NW NW 24-11n-4w, is drilling below 6842 feet after several fair shows in the Tuscaloosa zone. Cores at 6508 feet recovered sand with slight shows of heavy oil, while cores at 6652 feet developed sand saturated with heavy asphaltic oil. Cores below that point had no shows. No shows had been noted previously in the Eutaw zone.

Alabama

A. R. Temple's Smith Lumber Company 1, NWc 26-8n-16e, Crenshaw County, is drilling below 5650 feet. No shows have been reported in the lower horizons.

Fayette County: Amerada Petroleum Corporation's D. H. Wright 1, NW SW 8-15s-10w, is drilling below 3986 feet. No shows have been reported.

Clarke County: Amerada's Thomas 1, NW NE 30-7n-2e, in the western section of the state, is drilling below 1515 feet in a drive for the Eutaw.

Florida

Hunt Oil Company's Gehew-Linton 1, NE NE 30-3n-17w, Walton County, is drilling below 5767 feet with no shows reported. Last cores taken at 4542-889 feet recovered sand.

Suwannee County: Sun Oil Company's J. H. Tillis 1, SE SW 28-2s-15e, wildcat, was running core tests below 3132 feet. No shows have been reported.

Collier County: Humble Oil & Refining Company's Gulf Coast Realty Company 11, NWc SW 20-48s-30e, Sunniland field, ran core tests of the field's

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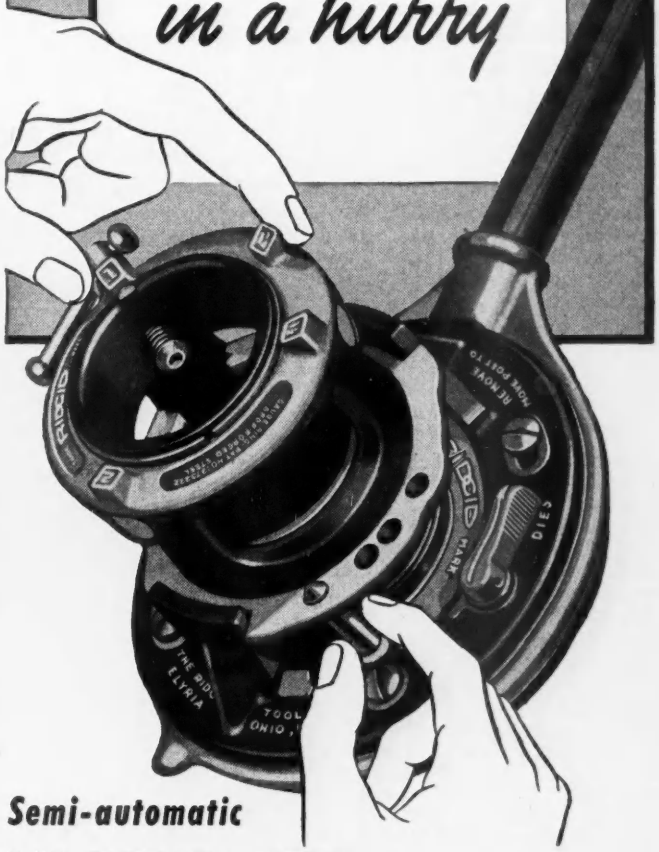

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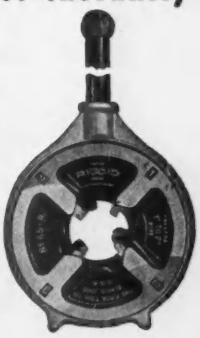

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productive zone. A drill-stem test at 11,393-425 feet had a slight blow and recovered 2070 feet of oil-cut mud. Bottom hole foot pressure was 950 pounds. Drilling continues below 11,468 feet.

Mississippi Session Set

Greek L. Rice, Mississippi attorney general and secretary of the State Oil & Gas Board, has called a board meeting for September 11 to consider rules covering well spacing, production allocation and other problems of the Mallalieu field in Lincoln County.

• Ohio

Sayre Pool in Perry County Has Another Clinton Producer

Second large Clinton well in Sayre; Sego pool extended north; north part of Tropic producing oil; Frazier extended by large well; Hemlock Grove remains most active Berea pool.

Perry County: A south extension to the Sayre pool was brought in by J. W. Watson et al at Jesse J. Ketcham 3, SE NE 27 Bearfield township. The well was drilled through the Clinton sand at 3913-40 feet, and gauged 2,400,000 cubic feet natural. The majority of the wells in the Sayre pool have been completed in the underlying Medina sand.

John Morrow et al offset their large C. A. Crossan 2 with Lizzie Henderson 3, NE SE 28, Madison township, which came in with a good showing of both oil and gas. After shooting the Clinton at 3260-3327 feet with 150 quarts, the well flowed 60 barrels in 24 hours and gauged 500,000 cubic feet.

W. H. Atha moved ⅓ mile north of the Atha 1, a dry hole, and brought in a fair producer NW NE 27, Madison township. Clinton sand at 3316-78 feet showed some oil and 500,000 cubic feet of gas, which blew out. After a shot of 15 quarts and 300 pounds of gelatin the well made 63 barrels the first day.

Morgan County: National Gas and Oil Corporation's Frank Rambo 3, York Township, is an encouraging well for the north part of the Tropic pool. Oil in the Clinton sand at 3758-89 feet filled up 1000 feet while drilling in and after shot flowed 50 barrels with 300,000 cubic feet of gas.

Muskingum County: Frazier pool was extended southwest with a large gas well at Hattie Stockdale 2, NE SW 15, Brush Creek township. Clinton sand came in at 3664-3705 feet and gauged 3,100,000 cubic feet of gas natural.

Meigs County: Hemlock Grove pool continues to rank the major Berea sand pool in the state with activity now concentrated at or near the south end. On an outside location, Preston Oil Company's Jas. Wickham 4, NW SE 1, Bedford township, made 55 barrels in 24 hours after shot. Berea was reported at 1629-49 feet. One-half mile northwest, H. B. Walker et al's Elmer Nelson 8 swabbed 90 barrels the first day after shot.

• Illinois Basin

Webster County, Kentucky, Test Has Tar Springs Flow

Webster County, Kentucky, semi-wildcat has oil flow from Tar Springs sand; Evansville, Indiana, pool discovery finaled; White County, Illinois, test finds saturation in Aux Vases; Richland and Wayne County wildcats show for McClosky discoveries.

Kentucky

George Engle's Dixon 1, 2L-24, semi-wildcat in Webster County, was flowing 335 barrels of oil daily from Tar Springs sand at 2552-80 feet. Operator was still testing.

Indiana

Calvert and Willis' Egli 1, NE SW SW 2-6s-11w, Vanderburgh County, 5 miles northeast of the Vernon Heights pool and near Evansville, has been completed as the discovery of the Evansville pool. The well yielded 165 barrels of oil daily on pump from Pennsylvania sand at 875-96 feet. Several other wells are drilling in the area.

Illinois

Oil Management Company's Eubanks 1, NE NW SW 18-7s-10e, White County, east of the Herald pool, was testing after finding 10 feet of saturated sand in Aux Vases at 2920-30 feet.

Richland County: George and Wrather's Leaf 1, SW NE NW 13-4n-10e, a mile north of the East Olney pool, was showing for a discovery in McClosky lime. On a drill-stem test at 2070-82 feet, the well gassed in 32 minutes, and yielded 210 feet of oil and 30 feet of oil-cut mud in 1½ hours.

Wayne County: Collins Brothers' Flowers 1, S½ NE NW 27-1s-9e, 3 miles north of production in the Golden Gate pool area, was showing for a discovery in McClosky lime at 3372-84 feet. The well made gas in 30 minutes and showed 150 feet of oil and 70 feet of oil-cut mud in 1 hour. Operators were testing.

George and Wrather's Turner 1, NW NE NW 23-1s-9e, 2½ miles from Massilon pool production, is a discovery in the Rosliclare. On a drill-stem test at 3340-49 feet, the well made gas in 10 minutes and 1010 feet of oil in 1 hour. Operators were drilling ahead to examine lower zones.

Shelby County: Paul Doran's Manning 1, NE NW SW 14-11n-11e, 9 miles northeast of the Stewardson pool and a mile from the 1-well Shelbyville pool, pumped 70 barrels in 24 hours from Aux Vases sand at 1865-80 feet after a 50-quart shot.

Hamilton County: A. J. Slagter's Williams 1, wildcat in SW SE NW 10-7s-7e, is drilling below 3185 feet.

• Michigan

Bay County Test Yields Oil And Gas Show in Traverse

Whyte, Stewart and Roush's Bradley 1, SW SE SW 12-17n-3e, Bay County, 1 mile north of the Mt. Forest (Dundee lime) pool development, carried a good show of oil, gas and water in the Traverse at 2145 feet. At least 1 well in the field carried Traverse oil at the same level but was completed in the 3050-foot Dundee section. The outpost was deepened 5 feet without an apparent oil increase but it logged more water and drilling will be continued to the Dundee section.

Newaygo County: Sun Oil Company's Mead 1, SW NW SE 15-12n-13w, southwest side of the Kimball Lake pool, was shut down for orders at 2380 feet after logging a hole full of water in Traverse lime objective, topped at 2378 feet. It was the second failure for the play where 60-commercial Traverse wells have been completed to date.

Allegan County: Ford Oil Company's Bloom 1, SE NE NE 34-4n-13w, Salem township, 3 miles north of the Brenner pool, logged Traverse at 1679 feet and carried a good show of oil at 1678 feet where drilling was suspended to set casing.

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• California

Oil Discovery Made East of Huntington Beach Field

Oil discovered 1 mile east of Huntington Beach field; Standard of California to drill wildcat at Newhall, oldest producing area in the state; new deep sand discovery established in Del Valle field; Sunray proves up 3 zones by drilling 3 wells in new Santa Barbara County field; state's deepest wildcat abandoned at 15,092 feet; Oil City test will search for production in the Cretaceous.

Orange County: Honolulu Oil Corporation has made an oil discovery about 1 mile east of the Huntington Beach field. Lamb 1 in the northwest corner of 6-6s-10w flowed on formation test an estimated 15 to 25 barrels per hour. Total depth is 5986 feet. No information is being released about the well but casing has been cemented at 5870 feet and a location has been made for a second project, Watson-Nau 1, 660 feet north. The discovery is about 1 mile northwest of the Anaheim Sugar area of the West Newport field and probably will be considered a new fault block area in that field.

Los Angeles County: Standard Oil Company of California will return to the Newhall area, the source of its first oil production in the state, and drill a wildcat northwest of the town of Newhall on property of the Newhall Land and Farming Company in 34-4n-16w. The location is about 1 mile northwest of a minor discovery made last year by Shell Oil Company on the Braille Institute property.

R. E. Havenstrite's new deep sand discovery in the Del Valle field, Lincoln 15 in 16-4n-17w, was swabbed in flowing an estimated 400 barrels from perforated interval at 10,942-11,742 feet. This is the seventh producing zone discovered to date in this field.

Monterey County: The Texas Company, most active wildcatter in the county, has located Biaggi 1 in 12-22s-9e, 2 miles west of the town of San Ardo. Two shallow tests were drilled at this location many years ago and 1, know as the Newell well, drilled prior to 1918, was reported to have bottomed at 1310 feet in oil sand. Several unsuccessful tests have been drilled recently in the San Ardo, area, but none in the immediately vicinity of the new location. About 15 miles northwest Texas is drilling a second test, Currell 2, near the town of San Lucas in 4-21s-8e below 1900 feet. Persistent wildcatting efforts in this county over a period of many years have so far been unrewarded, but occasional showings maintain interest.

Santa Barbara County: Sunray Oil Corporation has completed its third well in the new producing area, which it discovered last spring about 1½ miles southeast of the Orcutt field. Each of the 3 is producing from a different horizon. Latest producer is Los Flores 1-A, completed in a shallow zone at 940 feet not tested in the previous 2 wells. It will make a good pumper. Los Flores 2 was flowing 100 barrels of 31-gravity oil from the chert zone at 5525 feet. This is the main producing zone in the Orcutt field. The discovery well, Los Flores 1, was completed 2 months ago in a heretofore unknown Miocene sand at 4805-30 feet for an initial production of 550 barrels of 34-gravity oil. The number of producing zones makes the discovery among the most impressive of the year, although the surface area of the field probably will not be large.

Kern County: Unrecoverable drill pipe fish has caused the abandonment of the state's deepest wildcat, Western Gulf Oil Company's S. P. 1 in 25-12n-20w, about 10 miles south of Bakersfield.

Shell's K. C. L.-A 53-30, deep Vedder test in the Ten Section field, is a no-dope well, but reports are that tests to date have shown negative results. Total redrilled depth of the well is 14,000 feet and last interval tested was 13,026-195 feet. Tests were being made of higher intervals. Endeavors to find oil below the Stevens zone in this field and other fields in the county have proved disappointing.

General Petroleum Corporation has completed an unusually good well in the Lost Hills field where new wells usually make less than 100 barrels a day. Its Lost Hills Three 4 was completed on the pump for 216 barrels of 14-gravity oil, 8 percent.

Fresno County: Fresno Oil Investment, Inc., has spudded an interesting wildcat about ½ mile south of the old Oil City area of the Coalinga field. The company is drilling Phelps-Government 2 in 20-19s-15e. Oil City is the only field in the state where commercial oil production has been obtained from rocks of Cretaceous age.

• Rocky Mountain Area

Discovery in Albany County, Wyoming, to Be Put On Pump

Pump to be installed for completion gauge on discovery in Albany County, Wyoming; Park County well gets gas and oil in test of Second Frontier; casing run on Washakie County discovery; Mush Creek field apparently has west extension; East Powder Wash area, Colorado, test quits.

Wyoming

Phillips Petroleum Company and The California Company have acid-washed the Muddy sand with 800 gallons of kerosine and 500 gallons of mud acid at Christiana 1, NE NE SE 8-17n-77w, Seven Mile, Albany County, west of Laramie. Operator was swabbing wash water and emulsion at 5500 feet preparatory to installing pump for completion gauge. This well is a discovery in the Muddy sand after being deepened to the Sundance formation at 6776 feet, total depth, where water was recovered. Muddy was topped at 5820 feet and casing has been perforated.

Park County: Seaboard Oil Company of Delaware and Resolute Oil Corporation recovered gas and oil at an estimated rate of 100 barrels daily on drillstem test of the Second Frontier at the Sand Coulee wildcat in northwestern Wyoming. The well, which is Northern Pacific 53-33, NW SW NE 33-58n-100w, was tested at 5918-48 feet and blew approximately 200,000 cubic feet of gas with 2½ barrels of fluid per hour. A large percentage of the fluid was high-gravity oil. Top of Frontier was tentatively placed at 5500 feet. The well probably will be drilled through the Frontier and may go to the Tensleep and Madison formations, productive at nearby Elk Basin. This well is on a block assembled by Julius Peters of Great Falls, Mont., head of Resolute. The well

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Washakie County: Casing has been run on General Petroleum Corporation's No. 45-26-G, NE NE SW 26-46n-91w, Sand Creek discovery, and the well will be tested soon. This test was drilled to 6753 feet, total depth, approximately 63 feet in the Third Frontier formation and additional saturation was cored in that sand. On drill-stem test at 6738-92 feet the well made an estimated 750,000 cubic feet of gas with 12 barrels of 45.5-gravity oil in 38 minutes. A test attempted between 6728-53 feet failed. The well is estimated good for more than 450 barrels of oil per day. This test is approximately 885 feet higher structurally on the Frontier than the same company's Embar lime producer on the South Fork structure, 5 miles west.

Weston County: Another west extension to the Mush Creek field seemed apparent following electrical log survey of Morton Oil Company's Johnson 1, NE NW NE 17-44n-63w, ¼ miles west of the same company's Sedgewick 1, which recently extended the field 1½ miles west. Top of the Newcastle at Johnson 1 was at 4143 feet, with total depth 4159 feet. Sixteen feet of good saturation was logged and casing was being run for completion. Phillips Petroleum Company and Morton are clearing location for a further extension at Wakeman 1, C NW SE 7-44n-63w, ¾ mile west of Morton's Johnson 1.

Colorado

After testing water in the best sands, Cities Service Oil Company and Transcal have abandoned Government 1, SE SE NW 27-12n-96w, Moffat County, East Powder Wash area. The well was drilled to 6000 feet, total depth, and casing run to 5800 feet. Sands at 3780-800, 3747-60 and 5461-80 were perforated but all tested water. No shows were encountered when the well was drilled but the Wasatch (Tertiary) sands had shown encouragement on electrical log. Sands in this well did not correlate with those which produce oil and gas in the Powder Wash field proper, 6 miles west.

Utah

No shows have been logged in the Coconino at Pacific Western Oil Company's Unit 1, C SE NE 24-14s-7e, Carbon County, which is now the deepest well in Utah. The well was reported running electrical log at 11,621 feet, total depth, 53 feet in the Coconino sand. The sand has been extremely hard and tight and the operator may run casing and test zones up the hole which indicated possibilities on electrical log. Formation intervals have thickened over those expected when the well was started, and correlation has been difficult because of the very few wells drilled in this section of the state.

• Canada

Globe-Leduc West 2 Scores Success in D3 Devonian Zone

Globe-Leduc West 2, 1½ miles northwest of the limits proven by Imperial Oil, Ltd., producers, kicked off August 30 after swabbing down to the 2500-foot level.

After flaring 20 minutes, flow was turned into the tanks for a recovery of 158 barrels hourly flush open flow, the largest to date. The 7 Imperial completions showed flush rates of 1000 to 2000 barrels daily.

The Globe well was choked back to 27 barrels of 40-gravity oil hourly, with gas-oil ratio 400 to 500 cubic feet per barrel. Tubing pressure was 490 pounds. The well was bottomed at 5284 feet with 7-inch casing set to 5270 feet in the D3 Devonian.

Imperial Oil has now made 8 straight successes at Leduc. A 58-minute drill-stem test of the D3 interval at 5299-310 feet at Leduc 8 yielded a flow of 97 barrels of oil. A further 10-foot core to 5320 feet gave a comparable result the following day. Seven-inch casing was set to 5312 feet and the well was slated to be put on production.

Okalta Leduc 1, wildcat 2½ miles southeast of the Leduc producing area, is the first definite failure for the area. Drilling was halted at 6110 for abandonment. The well found water in D2 and D3 Devonian zones.

Homestead Yaremko 1, wildcat 2 miles east of the Leduc producing area, showed water in the top of the D2 zone at 4935-51 feet with a 3850-foot rise in 1 hour on drill-stem test. It was drilling on for the D3 zone below 5150 feet.

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Desha County: Carter Oil Co.'s Lewis Isom 1, c se sw 33-9s-1w, Nacatoch 4158, Tokio 4335, Eagle Mills 4660, abnd 8-25-47 at 4725.

CALIFORNIA WILDCATS

Butte County: General Pet. Corp.'s Llano Seco 2, 28-10n-1w, Willow area, abnd 8-27-47 at 3050.

Kern County: General Pet. Corp.'s Kern-sumner 27-22, 22-30s-28e, Weedpatch area, abnd 8-25-47 at 6806.

Belridge Oil Co.'s 37B-28, 28-28s-21e, S. Belridge area, abnd 8-22-47 at 3506.

Orange County: Morton and Kohlbush's Town Lot 6, 10-6s-11w, Huntington Beach area, abnd 8-24-47 at 1970.

San Luis Obispo County: Oil Well Abandonment Co.'s Cuyama 1, 25-11n-28w, Cuyama area, abnd 8-20-47 at 4795.

Yolo County: Shell's Heinz Unit 1, 20-8n-1e, Winters area, abnd 8-18-47 at 5300.

COLORADO WILDCAT

Moffat County: Cities Service—Transcal's Gov't. 1, se se nw 27-12n-96w, E. Powder Wash, abnd at 8-27-47 at 6000.

KANSAS WILDCATS

Barton County: Derby Oil Co.'s Simmons 1, se sw sw 3-18s-11w, abnd 3361.

Vicker's Hagen 1, sw se nw 28-20s-11w, abnd 3375.

Ellis County: H. V. Elwell's Sessin 1, ne nw se 15-11s-19w, abnd 3532½.

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Rice County: H. H. & B.'s Steuckemann 1, nw nw ne 11-21s-17w, abnd 3942.

Rooks County: Tom Palmer's Henderson 1, 6-10s-17w, abnd 3737.

Saline County: Jackson Drlg. Co.'s Weiss 1, nw nw ne 21-14s-2w, abnd 3364.

Stafford County: Cities Service's Witt 1-B, nw ne sw 26-21s-12w, abnd 3700.

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Catahoula Parish: Pan-American Prod. Co.'s Lydia R. McGraw et al 1, c se se se 24-10n-8e, Cockfield 1120, Cook Mt. 1720, Sparta 1918, Cane River 2882, Wilcox 2857, Midway 4466, Chalk, 4910, Tuscaloosa 5839, Calcite Cap 5896, abnd 8-23-47 at 6225, pb 2490.

Red River Parish: Union Prod. Co.'s Campbell 1, 2310 fr s&wl 20-12n-10w, base Massive Anhydrite 4853, Pettit 5910, Travis Peak 6682, abnd 8-28-47 at 7610.

Union Parish: Petersen Drlg. Co.'s Mrs. D. D. Galloway 1, c sw se sw 18-22n-1e, abnd 8-27-47 at 2332.

Winn Parish: Stanolind's Tremont Lbr. Co. 1, c nw sw 30-12n-1w, base Chalk 4200, Tuscaloosa 5380, Massive Anhydrite 8406, Travis Peak 10,250, abnd 8-30-47 at 12,569.

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Acadia Parish: Nelson Bunker Hunt Tr. Est.'s American Rice Milling Co. 1, c nw nw 23-9s-1w, Marginulina 9715, Camerina 10,173, Hayes 10,025, abnd 8-13-47 at 10,942.

MICHIGAN WILDCATS

Kent County: Byron MacCallum's English 1 se ne se 28-10n-12w, Traverse 2352, abnd 8-27-47 at 2364.

Oceana County: Cities Service's State 1, se se sw 17-15n-15w, Traverse 2130, abnd 8-26-47 at 2225.

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■ SEE A. L. BOWLES, ADA, OKLAHOMA, FOR SHALLOW DRILLING DEALS IN OKLAHOMA.

MISSISSIPPI WILDCATS

Amite County: Gulf's J. A. Rowland A-2, 29-4n-2e, Wilcox 4920, Tuscaloosa 10,607, Comanchean 11,550, abnd 8-27-47 at 11,578.

Humphreys County: Cities Service's Jones Estate 1, nec 19-15n-1w, Wilcox 1236, Selma 3963, Eutaw 4860, Tuscaloosa 5413, Comanchean 6267, abnd 8-26-47 at 6291.

MONTANA OUTPOST

Yellowstone County—Mosser Dome: Anton Koeber's Metzger 1, sw sw nw 8-3s-25e, Embar 2280, Madison 2465, water, abnd 8-27-47 at 2670.

OKLAHOMA WILDCATS

Alfalfa County: Texas Co.'s McArthur 1, ne sw sw 18-28n-12w, abnd 5985.

Cotton County: Fred Jones' Thurman 1, ne ne nw 26-3s-12w, abnd 2516.

Morgan Brown's Lee 1, ne sw sw 26-4s-11w, abnd 1550.

E. C. Harlim's Eastman 1, sw sw se 18-4s-12w, abnd 2110.

Walter Duncan's Lakey 1, ne nw nw 8-5s-12w, abnd.

Creek County: O. G. Harp et al's Werrell 1, sw sw ne 14-15n-7e, abnd 3985.

Lincoln County: Faultline Oil Co.'s Holbrook 1A, sw se ne 19-17n-3e, abnd 4266.

Portable Drlg. Co.'s Rose-Hart 1, sw sw nw 32-17n-3e, abnd 4863.

Pawnee County: Indian Drlg. Mud Co.'s High Eagle 1, nw sw ne 5-20n-5e, abnd 3919.

Seminole County: Paul Trough's Sturgeon 1, se sw se 16-6n-7e, abnd 1868.

Stephens County: Ace Gutowsky's Brooks 1, sw se sw 18-2s-9w, abnd 3664.

WEST TEXAS WILDCATS

Andrews County: McAlester Fuel Co.'s Fisher-Magnolia 1, c sw sw PSL 4, Blk. A-36, elev 3163, anhydrite 1780, Yates 2860, brown lime 3920, Clear Fork 6167, Tubb 6695, abnd 8-30-47 at 7365.

Ector County: Humble's Parker 1, c nw nw T&P 2, blk 45, T-2-S, elev 3174, Glorietta 5300, Clear Fork 5670, abnd 8-22-47 at 5960.

Gaines County: Union Oil Co.'s Kuehn 1, c nw nw PSL 16, blk C-44, elev 3266, anhydrite 2150, San Andres 4908, abnd 8-27-47 at 5305.

Pecos County: J. V. Massey & J. B. Tubb's Williams-Plymouth 1, 330 out of swc of sect 99½, H½GN Sur, blk 8, Rustler 925, abnd 8-18-47 at 2501.

Scurry County: Signal O&G Co.'s Whatley 1, c ne ne H&TC 548, blk 97, elev 2611, abnd 8-20-47 at 2080.

JENSENS Squeeze Production Costs into MORE PROFIT

We don't know anyone in the oil business who isn't suffering from high taxes and labor costs. Nor have we ever heard of a producer who wouldn't like to reduce production costs.

The former—we can't do anything about. The latter is right down our alley. For Jensen Pumping Units—by cutting maintenance, service and operating costs—actually squeeze production costs into more profit.

Frankly, you have a better chance of making more money this way than you do thru reduced taxes and labor. Think it over. Then, see your Jensen dealer or write . . .

JENSEN BROTHERS MANUFACTURING CO.

. . . Coffeyville, Kansas, U. S. A. . . .

EXPORT OFFICE: 50 CHURCH STREET, NEW YORK CITY

WEST CENTRAL TEXAS WILDCAT

Crockett County: Honolulu and Signal Oil & Gas Co.'s Henderson 1, ne ne ne GC&SF 8, blk M, elev 2488, abnd 8-19-47 at 1070.

NORTH CENTRAL TEXAS WILDCATS

Brown County: Lydia Johnson et al's Goss 1, ne ne nw BBB&C Ry. 16, Ellenburger 3422, abnd 8-17-47 at 3540.

Jones County: Creslenn Oil Co.'s Caton 1, c nw sect 9, Deaf & Dumb Asylum sur, elev 1535, Palo Pinto 3369, abnd 8-16-47 at 3385.

Signal O&G Co.'s Carruthers 1, 370 out sec lot 4, McMillan & McGloin sur 336, elev 1784, abnd 8-9-47 at 3564.

Shackelford County: S. D. Johnson-Acme & Machine Co.'s Newcomb 1, 660 out of nwc e½ of w½ AB&M and Lewis Wilburn sur 4, blk A, elev 1580, Home Creek 2570, Palo Pinto 3190, Strawn 3445, Ellenburger 5153, abnd 8-7-47 at 5255.

NORTH TEXAS WILDCATS

Archer County: B. F. Gilchrist Drlg. Co.'s Coleman 1, 450-out nwc blk 25, Brazos CSL, abnd 8-20-47 at 1532.

Mrs. Goldie Persky et al's Ray 1, 1250 snl 1945 ewl blk 150, J. W. Harris sbdn, abnd 8-20-47 at 1370.

Fortex Oil Corp. et al's Parkey 1, 1485 nsl 825 ewl S. P. Ry. 1, abnd 8-17-47 at 1775.

S. W. Petre et al's Wilson 1, 450 nsl 900 wel lot 2, Wilson's Geraldine Townsite sbdn, abnd 8-15-47 at 1610.

Baylor County: S. D. Johnson-Acme Die & Machine Co.'s Tankersley 1, 330 snl 3043 wel BBB&CRR 77, blk A, elev 1362, Bend 5540, Ellenburger 5626, abnd 8-22-47 at 5656.

Cooke County: F. & G. Oil Co.'s Mann 1, 2200 nsl 1950 wel J. O. Hill Sur, Ellenburger 1965, abnd 8-21-47 at 2000.

Harvey Drlg. Co.'s Wilson 1, 2350 snl 1900 ewl M. L. Webster sur, abnd 8-19-47 at 2505.

Montague County: D. H. Bolin et al's Howard 1-B, 3111 snl 3115 ewl Oscar E. Leverett sur, elev 753, abnd 8-13-47 at 3422.

Wilbarger County: Paradise Oil Co.'s Waggoner 1-K, 1980 nsl 2244 ewl H&TC 21, blk 14, elev 1194, Ellenburger 4772, abnd 8-25-47 at 4822.

Fain & McGaha's Sharpe 1, 2162 wel 330 nsl of n 355-ac of H&TC Ry. 67, blk 12, elev 1219, abnd 8-14-47 at 5522.

TEXAS PANHANDLE WILDCAT

Childress County: Amerada's Middleton 1, c se nw W&NWRR 388, blk H, elev 1669, Wichita-Albany 1920, Pennsylvanian 3200, Canyon 4410, Strawn 5520, Ellenburger 8340, abnd 8-23-47 at 8497.

EAST CENTRAL TEXAS WILDCAT

Benton County: Russell Maguire et al's Waide 1-a, 330 out of swc A. H. Lynde Sur, weathered schist 1918, schist 1968, abnd 8-25-47 at 1978.

NORTHEAST TEXAS OUTPOST

Harrison County—Unnamed Field: Southern Prod. Co.'s W. H. Cargill Est. 1, 2465 se alg sl 590-ac tr fr swc W. H. Cargill Est., th 494 ne at ra to lcn in P. Dougherty Sur, 1030 ne Arkansas Fuel's McCauley 1 disc, e mi e Scottville, abnd 8-26-47 at 6696.

SOUTH CENTRAL TEXAS WILDCAT

Calhoun County: Quintana's F. L. Frerichs 1, 230 fr sel 4300 fr swl John Polland Sur, 2 mi nw Green Lke disc, abnd 8-18-47 at 10,185.

SOUTHWEST TEXAS-LOWER COAST WILDCATS

Duval County: Daubert & Achning's Jas. F. Welder Hrs. 1, 660 fr nl 500 fr wl 320-ac lse, being e½ J. Poitevent Sur 213, abnd 8-19-47 at 1570.

Milam Drlg. Co.-Don Marsh's J. C. Thomas 1, 467 fr n&wl lot 4, Realitos sdbn Copita F&G tr, Sect 11, Jose Ynojosa Gr, abnd 8-24-47 at 5156.

Jim Hogg County: Don H. Marsh's Isabel R. de Guiterrez Est. 1, 467 fr s&el 80-ac lse, Mrs. E. Tribble Sur 620, abnd 8-18-47 at 4010.

Nueces County: Southern Minerals Corp.-L. A. Douglas' W. M. Schwenke 1, 467 fr sl 2850 fr el O. M. Oliver Sur 164, abnd 8-21-47 at 7502.

Starr County: Lockhart & Co.'s Domingo L. Garza 1, 467 fr sl 1000 fr el C&MRR Co. Sur 753, abnd 8-19-47 at 3200.

MIDDLE TEXAS COAST WILDCAT

Karnes County: Edwin B. Cox-J. L. Hamon's J. R. Murphy 1, 2274 fr nwl 330 fr swl 230.96-ac lse, Thos. Harmon Sur, 1½ mi e Burnell-Wilcox fld, abnd 8-22-47 at 3852.

UPPER TEXAS COAST WILDCATS

Chambers County: Kirby Pet. Co.'s Kirby Pet. Co. Fee, Tr. 8-1, 427 nely fr wl 330 sely at ra fr nwly/1 160.87-ac lse, Chambers CSL Sur 3, abnd 8-10-47 at 8000.

Hardin County: American Republics Corp.'s J. H. Barnett-W. B. Carroll 1, 666.83 fr wl 509.85 fr nl 108.3-ac lse, Alex. Hampton Lge, 4500 s s w Hampton 1 disc, abnd 8-14-47 at 8303.

Walker County: Gar-Flo Oil Co.'s Gabe Smither's Est. 1, 3030 fr nely/1 5500 fr sely/1 W. Robinson Sur, 675-ac lse, 971 nw of nwc E. M. Smither 66-ac tr, abnd 8-6-47 at 3019.

J. A. Krug, Secretary of the Interior, has added four new members to the National Petroleum Council. They are **Bruce K. Brown** of Chicago, president of Pan American Petroleum Corporation, New Orleans, and vice president of Standard Oil Company (Indiana), who is chairman of the military petroleum advisory committee and was a key official in PAW; **Ardon B. Judd** of Houston, president of the Petroleum Equipment Suppliers Association and vice president and general manager of the Republic Supply Company; **Alexander Fraser** of New York, president of Shell Union Oil Company; and **Russell S. Williams** of Indianapolis, president of the Individually Branded Petroleum Association of America and president of Gasteria, Inc.

»

F. G. Cance, assisted by **M. Binet,** will take over the management of the New York office of Societe Nationale de Materiel Pour la Recherche et L'Exploitation du Petrole on October 1. The firm is in charge of supplying equipment to the French drilling organizations. Cance and Binet are going to New York from S.N.M.A.R.E.P.'s main office in Paris. Succeeding **E. F. Lassauze,** whose assistant was **G. Semenoff, M. Schwob,** who is now leaving, assumed the management of the office from May, 1947, to October 1. He was assisted by **R. Buttin, J. Bertaux,** in New York, and **P. E. Abadie** in Washington.

»

Kraus Earhart, supervisor of the safety division, The Texas Company, Houston, has been appointed a representative of the company's foreign operations. The change was effective September 1. Following a visit to some of the Texaco foreign operations and the New York office, Earhart will return to Houston about October 1. Among his duties will be that of recruiting employes for foreign operations. Earhart joined The Texas Company in 1925. He served as District 3 director of the Security Division of the Petroleum Administration for War from 1942 to 1945.

»

Ralph S. Jackson, associated with Independent Exploration Company, Houston, since 1932, and vice president of that company since 1942, has resigned and opened an office at Beeville, Texas, to practice as a consulting geophysicist.

»

J. T. Devaney, scout at Jackson, Miss., has been moved by The Atlantic Refining Company to Lake Charles, La., as landman. He was replaced by **W. C. Albright,** previously of the Dallas office. **Charles W. Alcock,** geologist in Mississippi, has been transferred to Dallas and was replaced by **C. W. Sternberg** of Casper, Wyo. **B. S. Chessman,** now at Midland, Texas, has joined the company as a geologist.

»

Harold Davidor, independent, is closing his Jackson, Miss., office. He will open an office in Oklahoma City to participate in activity in that area now being handled by the Wichita Falls, Texas, office of **Robert Davidor.**

N. A. Kendall, Houston geologist and petreloum engineer, is en route to Paris, France, where he will join the Institute du Petrole as an instructor. Kendall expects to return to the U. S. in January. He is a graduate of the University of Oklahoma, and at one time was with the Royal Dutch companies in the East Indies. In recent years he has been with Standard Oil Company of Texas.

N. A. Kendall

»

Dr. E. S. Merriam of Marietta, Ohio, consultant for the natural gas industry, has joined the faculty of the Marietta College School of Petroleum on a part-time basis. He will teach courses in engineering materials, and gas production, distribution, and utilization. Dr. Merriam is a pioneer engineer in the field of gas by-products, holding 15 patents. He was among the first to devise and publish methods for determining the amount of gasoline in natural gas.

»

John Poje has been granted a fellowship in chemistry established at the University of Kansas by Stanolind Oil & Gas Company.

W. R. Wilson, district landman for The Pure Oil Company at Shreveport, has resigned to move to Tulsa and work in the surrounding area as a lease broker. He was employed by Pure for 12 years, serving in Oklahoma, Illinois, Michigan, Indiana, Kentucky, and Delaware.

»

Henry N. Tolar has been put in charge of Southern Natural Gas Company's consolidated offices in the Deposit Guaranty Building, Jackson, Miss., formerly headquarters of the exploration department. Land records have been moved from Shreveport and **Vent B. Speaker** made assistant manager in the land department, succeeding **Pete Johnson,** now working independently.

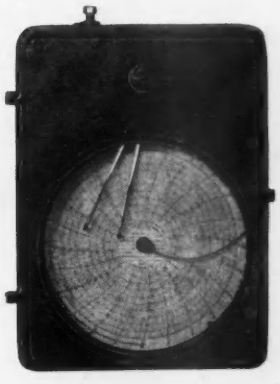
»

Harold B. Ward, assistant to the president and manager of the land department, Wilcox Oil Company, Tulsa, will retire September 15 to become an independent operator.

»

W. D. Bednar has joined the staff of Meyer and Achtschin, consultants in petroleum geology, petroleum economics and petroleum engineering, Continental Building, Dallas. Bednar formerly was petroleum engineer for Amerada Petroleum Corporation, associate professor of petroleum engineering at the University of Oklahoma, petroleum engineer in charge of drilling and production for Northern Ordnance, Inc., and an independent consultant.

SIMPLE RUGGED ACCURATE



THREE reasons for American Meter Company's METRIC Orifice Meters strong appeal to meter engineers. Simple service tools are needed . . . a screwdriver, an ordinary wrench and a pair of pliers. Service men are easily trained. There's only one moving part between the surface of the mercury and the chart record. Large float area eliminates loss of accuracy often caused by dirt particles.

That's why METRIC Orifice Meters, based on the famous Westcott Manometer, have an unsurpassed reputation for low-cost accuracy throughout the world.

Technical literature, giving complete data, will be mailed on request. Also information on the Round Case Flowmeters, Liquid Level and Flow Controllers.

AMERICAN METER COMPANY

INCORPORATED ESTABLISHED 1836

Albany • Atlanta • Baltimore • Birmingham • Boston
Chicago • Dallas • Denver • Erie • Houston • Joliet
Kansas City • Los Angeles • New York • Orlando
Philadelphia • Pittsburgh • San Francisco • Tulsa

E. A. Jamison, manager of industrial and utility activities of the Philgas Division, Phillips Petroleum Company, Bartlesville, Okla., will address the Ninth Annual Forum of the Porcelain Enamel Institute on "Use of Liquefied Petroleum Gas." The forum will be at Ohio State University, Columbus, September 10-12.

»

Ed White, former national intercollegiate golf champion, has joined the sales force of the Oil Center Tool Company.

H. A. Gross has been appointed purchasing agent at Columbus, Ohio, according to Ferguson Barnes, vice president, Columbus Division, International Derrick and Equipment Company. Gross is a graduate of Penn State University and has been associated with the oil business for ten years.

»

Harry Boyd-Sneed, former oil editor of the Wichta **Beacon,** Wichita, Kas., is now with the crude oil purchasing division of Standard Oil Company (Indiana).

Leslie Moses, formerly with Fohs Oil Company, has joined Midstates Oil Corporation and will be located in Shreveport. Moses engaged in general law practice at New Orleans for 12 years after his graduation from Tulane University in 1924 and then joined Fohs as attorney. He was named secretary and general counsel in 1942 and continued in that capacity until the sale of the company.

»

Hal C. Walker, scout for The Ohio Oil Company at Casper, Wyo., has been promoted to land man and is succeeded as scout by **Wesley Felt.**

»

Luther Williams, public relations director for Sunray Oil Corporation, Tulsa, has been appointed chairman of the petroleum industry's Kansas-Oklahoma advertising committee.

Deaths

Frank Webber, oil operator in the San Juan basin, died in Durango, Colo.

»

Earle W. McMullen, 60, director of research for The Eagle-Picher Company and prominent in engineering chemistry, died August 26 at Pittsburg, Kansas.

A *NEW* BLADE FOR *HIGHER* EFFICIENCY

In Hard-Area Shot Hole Drilling

Type "AC" Assembly for "N" or API Rod

Type "DB" Assembly for "A" or "N" Rod

Here's really good news for you folks who've been using Hawthorne Bits . . . **it's a new blade that will cut hard formations as efficiently as any roller bit.** Its especially designed cutting edges are shaped so that each edge does a proportionate share of work . . . **never** at any time is the full cutting load imposed upon any one blade or section of one blade. Hard formation is removed in small chips which are easily circulated to the surface. Cutting edges, of course, are hard-faced for long service.

These new "Rock Cutter" Blades will interchange with standard Hawthorne Blades, however, **"Rock Cutter" Blades will cut soft formations just as efficiently as the standard blades,** so you don't have to change bits when you run out of hard digging.

For you folks who **haven't** been using Hawthorne Bits . . . get acquainted with them immediately. You'll like the economy, convenience and dependability they offer . . . and you'll like the way they lower your "bit costs per foot drilled."

AVAILABLE IN TWO MODELS

Type "AC" Assembly accommodates interchangeable blades in 3¾", 3⅞", 4", 4¼", 4½", 4¾" and 5" sizes. Type "DB" Assembly takes interchangeable blades in 3", 3¼", 3½", 3¾", 3⅞" and 4". **For highest efficiency, Type "DB" Assembly is recommended for use with 4" and smaller blades.**

Herb J. Hawthorne

P. O. BOX 7299 HOUSTON 8, TEXAS

THE OIL MAN'S CALENDAR

SEPT. 10–11	Rocky Mountain Oil & Gas Association, Fall Meeting, Casper, Wyo.
17–19	National Petroleum Association Annual Meeting, Atlantic City, Traymore Hotel.
23–24	Fall Meeting, Petroleum Division AIME, Los Angeles, Elks Club.
29–30	Annual Meeting Independent Petroleum Association of America, Oklahoma City.
28 to Oct. 2	Regional Meeting, AIME (Includes 2-day Petroleum Division Session), Denver.
OCT. 6– 8	American Gas Association, Annual Meeting, Cleveland.
6– 8	ASME Petroleum Mechanical Engineering Conference, Houston.
8–10	Fall Meeting, Petroleum Division, AIME, Tulsa, Mayo Hotel.
13–15	Annual Meeting, American Association of Oil Well Drilling Contractors, Long Beach, Calif.
16–17	Texas Mid-Continent Oil & Gas Association, Annual Meeting, San Antonio, Gunter Hotel.
NOV. 10–13	American Petroleum Institute Annual Meeting, Chicago, Stevens Hotel.
DEC. 1– 5	ASME Annual Meeting, Chalfonte and Haddon Hall, Atlantic City, N. J.
1948 APRIL 21–23	National Petroleum Association, Hotel Cleveland, Cleveland.
MAY 15–22	International Petroleum Exposition, Tulsa.

Nomads Chapter monthly meetings: LOS ANGELES, second Wednesday, Jonathan Club. HOUSTON, second Monday, Ye Olde College Inn. NEW YORK, first Monday, Louis Sherry's. TULSA, third Wednesday, Hotel Tulsa.

Halliburton Department Managers Named

Left to right, L. B. Meaders, Harry P. Conroy, Fred R. Whitten and W. R. McClendon.

Appointment of three department managers to assist in directing the company's expanding field operations and the advancement of other key men in the field organization were announced by Halliburton Oil Well Cementing Company.

New department chiefs are L. B. Meaders, Corpus Christi, Texas, formerly superintendent of the Southwest Texas division, now in charge of drill-stem testing and all service tools; H. P. Conroy, Houston, who has moved from the South Texas superintendency to managership of cementing and bulk cement operations; and Fred R. Whitten, Wichita, formerly superintendent of the Kansas division, now responsible for plastics, acidizing and dump bailer services.

As members of the staff of Vice President W. R. McClendon, executive manager of field operations, they will headquarter at the company's general offices in Duncan.

W. D. Owsley also has been added to the field staff with his promotion to the new post of engineering technical adviser. Owsley will devote full time to field engineering requirements. He has been succeeded as chief engineer by John Guest, formerly assistant chief engineer.

Advancement of Meaders, Conroy and Whitten resulted in the following promotions and transfers in the Halliburton field organization:

F. A. Johnson from assistant superintendent to superintendent of the Southwest Texas division, with headquarters at Corpus Christi; R. B. Beddingfield, assistant superintendent, South Louisiana division, New Orleans, to superintendent, South Texas division, Houston; J. E. Lacy, superintendent, California division, Los Angeles, to superintendent, Kansas division, Wichita; C. T. McGuire, superintendent, Rocky Mountain division, Denver, to superintendent, California division, Los Angeles; Coy O. Pace, assistant superintendent, West Texas-New Mexico division, Midland, to superintendent, Rocky Mountain division, Denver; J. B. Jones, sales field man, Oklahoma-North Texas division, Oklahoma City, to assistant superintendent, Southwest Texas division, Corpus Christi; Ed Paramore, field man, Salem, Ill., to assistant superintendent, South Louisiana division, New Orleans; P. C. Mayfield, division personnel director to assistant superintendent, West Texas-New Mexico division, Midland, Texas.

Franks Manufacturing Appoints Southwestern Sales Manager

S. E. Corry, formerly sales representative in the Illinois Basin area, has been named Southwestern Division sales manager for Franks Manufacturing Corporation, Tulsa, with offices in the Bankers Mortgage Building.

S. E. Corry

Corry's appointment coincides with Franks' new sales policy of offering its entire line of products, including skid, truck and trailer-mounted rotary drilling rigs and servicing units through supply stores.

Corry joined the Franks organization in August, 1943.

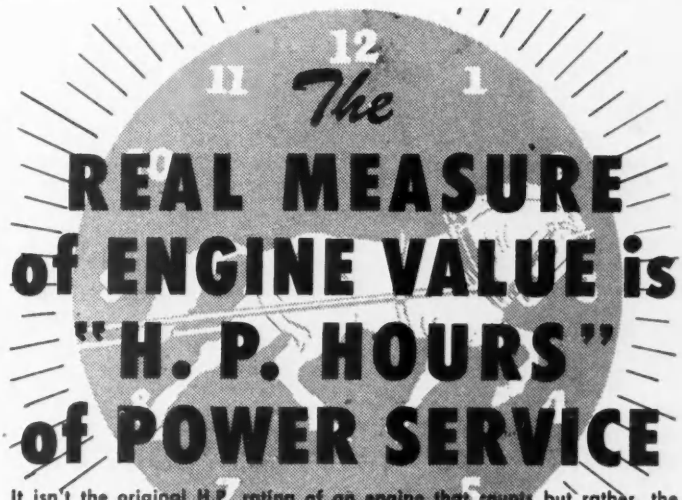
Clark Names Export Manager, Makes Other Personnel Changes

Clark Brothers Company announced the resignation of T. Fred Hudgins as export manager in the company's New York office at 122 East 42nd Street. Hudgins is organizing his own business in Dallas.

R. R. McCartney, while retaining his post as Clark Brothers district man-

Headquarters Moved

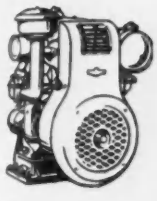
Ralph Haddox, assistant manager of the Tubular Department of Oil Well Supply Company, has transferred headquarters from Charleston, W. Va., to Oil Well Supply Company, 1607 Frick Building, Pittsburgh.

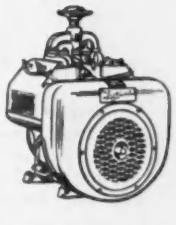


It isn't the original H.P. rating of an engine that counts but rather, the number of *H.P. Hours* of power service it will deliver during its lifetime. This, in the final analysis, is the real measure of *engine value.*

Wisconsin Air-Cooled Engines deliver the most H.P. Hours because they are designed and built for rugged, heavy-duty service. For example: every Wisconsin Engine, from the smallest to the largest, runs on Timken tapered roller bearings at both ends of the crankshaft to take up end-thrust and provide the best protection against bearing failure . . . at the same time assuring a smooth-running engine. This is just one typical detail that stands back of "Most H.P. Hours" of on-the-job power service.

You can't go wrong if you specify "Wisconsin Air-Cooled Engines" to meet your power requirements, within a 2 to 30 hp. power range.





Wisconsin Engines are available in a complete range of types and sizes (all 4-cycle) from 2 to 30 hp.

WISCONSIN MOTOR
Corporation
MILWAUKEE 14, WISCONSIN
World's Largest Builders of Heavy-Duty Air-Cooled Engines

WRITE TO HARLEY SALES CO.
510 Atlas Building, Tulsa, Oklahoma
M & M Building, Houston, Texas
Oil field distributors for Wisconsin Engines and all types of utility units.

ager, will assume Hudgins' duties as export manager. Avery G. Van Campen, who for the past two years has headed the technical service department in the New York office, will in the future be the sales engineer.

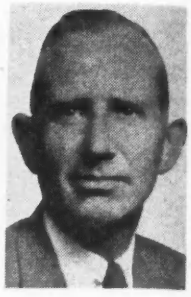
Robert Spears, for a number of years in the technical service department in Clark Brothers home office at Olean, N. Y., and who was recently transferred to the technical service department of the New York office, will take over Van Campen's post as head of that department.

West Coast Sales Positions Filled By Detroit Diesel Engine Division

Two appointments to West Coast sales positions were announced by V. C. Genn, general sales manager of the Detroit Diesel Engine Division, General Motors Corporation.

Lauren H. Wells has been assigned as sales engineer for the northern West Coast zone and will direct industrial, marine and petroleum distributors sales in that area. His territory will include Washington, Oregon and the northern part of Idaho.

L. H. Wells



Victor Hansen

Victor Hansen will take over the southern West Coast zone in a similar capacity with distributors in California, Arizona, and eastern Nevada coming under his jurisdiction.

The appointments of Wells and Hansen were made to fill vacancies left by Murrison C. Wright and James R. Williams who have taken over the northern California distributorship franchise for the sale of General Motors Series 71 Marine and Industrial Diesel engines.

Advertising Manager Appointed For Pittsburgh Equitable Meter Firm

William F. Weimer, for the past several years assistant advertising manager of the Rockwell Manufacturing Company, Pittsbugh, has been named advertising manager of the company's Pittsburgh Equitable Meter Division. He will have charge of the complete advertising program for the Pittsburgh Equitable Meter Division's lines of water, gasoline, oil and gas meters, gas regulators, and other products. He also will continue to assist with the administration of the overall advertising program of the Rockwell Manufacturing Company and its 14 operating divisions and subsidiaries.

William F. Weimer

Thermoid Company Announces Three Appointments to Top Personnel

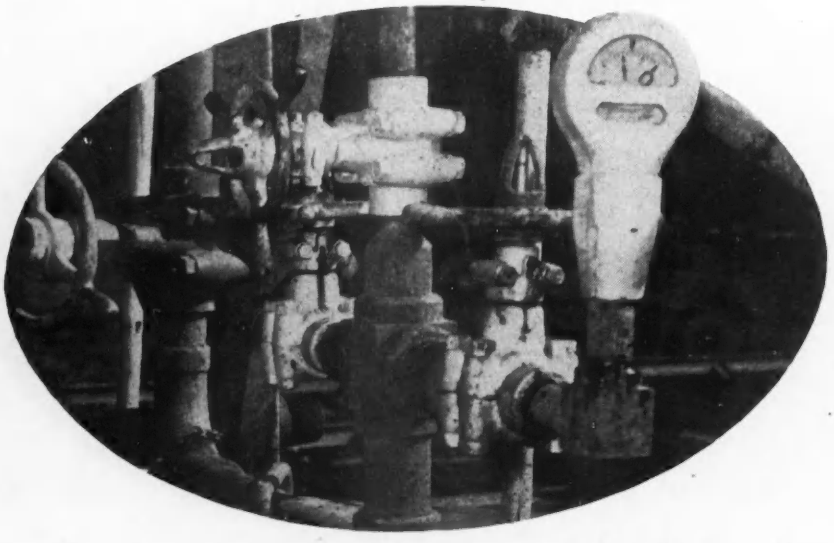
Appointments in three phases of Thermoid Company's activities have been announced.

M. R. Bell of Cleveland has been named assistant rubber production manager. Bell becomes assistant to Lester F. Cox, vice president of production for the Trenton Company.

L. I. Berry has been appointed production engineer for the Molded Hose division. He formerly was superintendent of construction and installation of new equipment for Hewitt Rubber Company and also devoted many years to molded hose development and production with U. S. Rubber Company and Mechanical Rubber Company.

Phil (Red) Shafer, former driver, owner and builder of racing cars, has been named fleet sales and service engineer. He will have charge of fleet engineering and service work in the Midwest area, with headquarters in Chicago.

True Report...
on Mudline Pressures
at a glance!



from across the derrick floor!

An outstanding feature of the Cameron Mud Line Pressure Gauge is the design of its dial which permits instantaneous reading of BIG, CLEAR, STEADY figures and division marks *from across the derrick floor!* The self-contained dampening mechanism requires no adjustment for changes in pressure range, and gives uniformly steady pressure readings where reciprocating pumps are used. All internal parts work in oil, thus eliminating corrosion and wear. The dial is cushioned against line vibrations. Type "D" for rotary drilling rig service; Type "F" for core drills, cementing and acidizing units, etc.

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SQUEAKS *from the* BULL WHEEL

This Curious World

He thought it was true love but it turned out to be only a passing fanny.

Science has discovered that exercise kills germs. The problem now is how to get 'em to exercise.

She thinks a boycott is a male davenport.

One nice thing about being a skunk is that you can hang around the neck of a beautiful woman long after you're dead.

Any woman's greatest asset is a certain man's imagination.

A woman broke her jaw and after X-ray pictures were made, the doctors had to view them through a movie camera.

Times haven't changed much. History records that the girls of ancient days used to sit all evening and listen to a lyre.

Good Idea

Betty, the five-year-old, met the caller at the door. "Alice isn't here," she replied to the caller's inquiry about her big sister. "She's gone to her class."

"What class does she go to?"

"Well, Alice is going to get married, and she's taking lessons in domestic silence."

Exit Running

"Any nice girls in this town?"

"Sure. All of them."

"In that case, how far to the next town?"

It Didn't Happen Here

He was shocked nearly out of his pajamas when he pulled back the curtains and discovered two strange blondes in his pullman berth. "Now listen, ladies," he said sternly. "I am a man of high morals. My reputation is excellent. My standing in my community is of the highest. My name has never been tainted by gossip. Therefore, ladies, one of you must leave."

The Woman's Way

"Is she fat?"

"Fat? Why, my dear, she's fat in places where most of us don't even have places."

Woman's Way Encore

"Who was that woman?" demanded the angry wife.

"Oh, just somebody I met professionally," the doctor soothed.

"Whose profession? Yours or hers?"

He Asked for It

Father: "You can ask a question, but make it short."

Small Son: "Well, when a doctor gets sick and another doctor doctors him, does the doctor doing the doctoring have to doctor the doctor the way the doctor being doctored wants to be doctored, or does the doctor doing the doctoring of the doctor doctor as he wants to doctor?"

Poet's Nook

There was an old woman
Who lived in a shoe;
Her relatives heard about it
—Now they live there, too.

Read This Twice

Traveling through an out-of-the-way village, a motorist noticed a man mowing his lawn in a very odd manner. The fellow would push the mower the length of the lawn, then hoist the machine to his shoulder and carry it back to the starting point.

A few doors farther down, the motorist saw another man watering his yard in an equally strange way. Though a hydrant and hose were handy, the man would walk down the road to a horse trough, fill a small bucket, walk back, and pour it on the grass.

Alighting, the puzzled motorist sought enlightenment.

"Oh," explained the villager. "It's just because we do things the hard way in these parts. We pride ourselves on doing everything the hard way."

The visitor meditated upon this a moment, eyeing the children upon the porch, then inquired: "How about putting on your clothes every morning? I bet you don't do that the hard way."

"You're wrong. We dress while standing up in a hammock."

(Editor's Note: The punch line to this charming little story can be twisted to suit the taste of the teller.)

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Large fluid passage.
Standard reversible ball and seat.
Rubber quickly changed on job.
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Rubber easily adjusted—0.42" under tubing I. D.
To expand rubber make up on cup.
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API threads. Lead compounded for easy break.
Alloy steel throughout. Heat treated to maximum tensile strength. Rust proofed per Navy specifications.
Break here to tandem swab.
Large internal area, streamlined, reduces tendency to blow out of hole.

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Have You Checked

The Trading Post?

Turn Back to Page 89

Government Agency Studies World Needs for U. S. Steel

The Office of International Trade last week began a study of world needs for American iron and steel products, preparatory to setting up quotas for each country, to go into effect October 1.

On that date all iron and steel products will be made subject to individual license, and exporters will have to submit separate applications for each item and each shipment designed for foreign consumption.

Announcing the new procedure, OIT officials reminded the industry that iron and steel products remain in short supply and warned that the quantities available to each applicant for export are not likely to exceed those approved during the current quarter.

The government agency will base its approval or rejection of applications largely on the use to which the material is to be put in the purchasing country and will require that applicants give full information concerning the intended end use of the products which they plan to ship abroad.

Oil Men to Be Members of Conservation Committee

Oil men drawn from the ranks of the National Petroleum Council are expected to take a prominent part on a committee which President Truman has asked Interior Secretary J. A. Krug to appoint to work with the preparatory commission which will plan the International Scientific Conference on the Conservation and Utilization of Natural Resources.

The conference, which is to be set up under the UN Economic and Social Council, will meet next year, probably in Washington, to discuss world problems in oil, minerals, lumber and other natural resources.

Directing Krug to set up the committee, the President indicated clearly that he wanted the best talent from all natural resource fields to be selected. The conference was initiated at his suggestion, Truman recalled, and because of that, he said, "I am especially eager to give the fullest possible cooperation to its planning and preparation."

While the conference is scheduled to consider all natural resources, the subject of petroleum is expected to occupy a major if not dominant place on the agenda. President Truman, in messages to Congress and elsewhere, has several times referred to the importance of action with respect to natural resources, pointing out that the U. S. came out of the war a "have not" nation in the case of many of its minerals and facing a similar situation in the not distant future with respect to other resources, possibly including oil.

WAA Offers Plant

Bids for the purchase or lease of the Eunice, N. Mex., carbon black plant, now being operated under an interim lease by the Panhandle Carbon Company, will be opened at the regional office of the War Assets Administration at Denver September 17. The plant is completely equipped to produce channel-type carbon black, the natural gas for which is being supplied by Phillips Petroleum Company under contract with the present lessee.

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